Remarks
ON
THE DIAGNOSIS AND SURGICAL TREATMENT OF CARCINOMATOUS STRICTURE OF THE COLON.

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I HAVE chosen the diagnosis and treatment of malignant stricture of the colon for disquisition because during the last few years I have had some 10 or 12 cases under my own care and have had the benefit of seeing a number of others under the care of my colleagues at St. Bartholomew's Hospital. By stricture of the colon I, of course, mean obstruction to the lumen of the bowel depending upon organic change of its walls. I confine my remarks to carcinomatous stricture because this is the most common form and also for the purpose of limiting whatever discussion may follow my paper.

I will discuss the subjects under the following heads: first, that the common form of carcinoma of the colon—namely, the columnar-celled—is one of comparative benignity and may remain for a considerable time a purely local disease limited to the wall of the bowel; secondly, that this being the case its early diagnosis is of such importance and justifies us when in doubt in making an exploratory incision, since if the growth is removed early with a wide margin of healthy bowel-wall the patient may be completely cured, or, stopping short of this, may enjoy several years of comfort before secondary deposits in the glands and internal viscera terminate his life; and thirdly, that when, as is too frequently the case, symptoms of acute obstruction have come on before surgical aid is sought it is better to operate in two stages; in the first place to do a preliminary colotomy with or without the withdrawal of the carcinoma on to the abdominal parietes, and in the second place when the patient has thoroughly recovered from the deleterious effects of the obstruction to remove the carcinomatous portion of the bowel and unite the ends of the bowel above and below.

I will now discuss the question under each of these heads, giving illustrations from cases that have been under my own care or that I have had opportunities of observing under the care of colleagues. First, that columnar-celled carcinoma, the most common form, is a comparatively benign growth and may remain for a considerable time a purely local disease. I need not say much under this head. The local origin of this form of carcinoma is, of course, well recognised by surgeons, but I am not so sure that we all are so familiar with the fact of its comparative benignity. In many of the cases I myself have had to deal with, even although the lumen of the colon has been so reduced as barely to admit a small quill, the growth has been markedly limited, affecting often not more than an inch of the long axis of the bowel, which it causes to become hard, contracted, and puckered, forming a little mass of about the size of a walnut or Tangerine orange and feeling to the fingers when introduced through an exploratory incision into the abdomen very like a small lump of scybalous fæces; and although in many of these cases the contraction was often so great that only fluid fæces could dribble through, still no lymphatics or glands could be felt enlarged, and in several cases that I have met with in the post-mortem room of similar growths there has been actually no glandular enlargement or secondary deposits in any of the organs. Two examples from my own practice bear upon this point. Eight years ago I removed with the help of my friend Dr. H. J. Ilott at the Cottage Hospital at Bromley a carcinoma of the cæcum and brought the ends of the divided gut together with Senn's plates. This patient made an uninterrupted recovery, and through the kindness of Dr. Ilott I was able to examine her when I started putting these few notes together a few weeks ago. She was still in the best of health and had no bowel trouble whatever, nor on careful palpation of the abdomen could anything abnormal be detected. During the early part of 1898, that is, three years ago, I removed another such localised mass, but from the sigmoid of an old lady, and she is still living and enjoying good health.

This brings us to the second heading—namely, the importance of an early diagnosis. With the typical symptoms of carcinomatous stricture of the colon when so far advanced as seriously to obstruct the lumen of the bowel we are most of us familiar—namely, that the patient gives a history of having had one or more, often two or three, attacks of complete constipation lasting for several days to a week and attended by abdominal pains and distension but relieved by purgatives and enemata; that vomiting has only appeared late during the last attack and is probably not of a feculent character; that the abdomen has been gradually becoming distended and probably bulges more in the right flank than in the left; that nothing can be felt in the rectum or through the abdominal parietes if there is much distension; and that notwithstanding the absolute constipation the patient is not collapsed, his temperature is not raised, nor is he, except that he suffers spasms of pain and from time to time is distressed by the vomiting, apparently very seriously ill. Given such symptoms most of us, I imagine, would venture to diagnose stricture of the colon, and where the patient is advancing in years and has been losing in weight would probably not be wrong in pronouncing the case malignant. Although even when the carcinoma is so far advanced as to produce symptoms such as the above the disease may still be local, as in the two cases I have just quoted, yet there must be a grave chance of dissemination having already occurred or of the growth having formed such extensive adhesions to surrounding parts as to preclude surgical interference. In a case of carcinoma of the cæcum and in another of carcinoma of the ascending colon on which I operated two or three years ago it was found on exposing the growth that its removal, in consequence of the matting together of neighbouring intestines, was quite out of the question, so in one I short-circuited the intestines by a Murphy's button and in the other opened the cæcum and established an artificial anus. Though both patients recovered from the operation, yet they succumbed within six months from dissemination of the disease in internal viscera.

What are the symptoms then that should arouse our suspicions of carcinomatous stricture whilst still in the early stage? A review of the history of my cases leads me to attach importance to the following: (1) indefinite symptoms of abdominal disturbance, such as uneasiness, distension, eructations, constipation, symptoms called by the patient and often by his medical attendant indigestion, but not referable to the stomach and not benefited by ordinary routine treatment; (2) attacks of pain or spasm referred to the colon, often of daily recurrence and having no special connexion with the time at which food is taken; (3) nearly always liquid stools with rarely a formed motion; (4) slowly progressive loss of weight; and (5) constant desire to defecate. Those in family practice may say that they are constantly meeting with such symptoms and find them yield to careful dieting, judicious drugging, rest, and change of air and scene, and no doubt this is so; but I have been greatly struck with the fact that in those cases in which I have taken a careful history and rigorously cross-examined the patient such symptoms have been almost invariably the precursors of the serious attack of obstruction for which I have been called in. Thus to quote one or two examples from my note-books. In the summer of 1899 I was asked to see a patient with serious obstruction by my friend Mr. P. E. Wallis of East Grinstead. The patient had suffered from obscure abdominal symptoms such as those I have mentioned and had consulted two or three eminent practitioners in town who had put down his symptoms to indigestion, gastritis, enteritis, &c., and had treated him for such without relief. In passing my finger into the rectum, just within reach I detected a columnar-celled carcinoma which had unfortunately too extensive attachments to admit of a removal. In a second case—that of a medical friend who consulted me some years back on account of piles and a small internal fistula—indefinite abdominal symptoms which he attributed to his local trouble had existed for some years. In addition to loss of appetite, eructations, distension after food, and constipation he had continually recurring spasm and pain in the region of the colon, and so constant was his desire to defecate that, as he told me, he had to spend half

his mornings in the water-closet, nothing, however, passing but a little slime and mucus unless he had taken a strong purgative. Beyond the piles and fistula nothing could be felt in the rectum or on careful palpation over the sigmoid. He was gradually losing weight and I felt convinced that he had a stricture and impressed upon him the desirability of an exploratory incision in the left inguinal region. This he would not consent to, preferring to take the view that his trouble was the result of reflex spasm of the bowel consequent upon the irritation of his hæmorrhoids—an opinion in which he was supported by some of his medical friends. He, therefore, got a surgeon to remove his piles (I would not do it myself), but, as I expected, this did not relieve him, and some 12 months or so later complete obstruction set in and inguinal colotomy had to be performed. A growth was then discovered but too late to permit of removal. My contention, then, is that given a patient with indefinite symptoms of indigestion, with constant daily attacks of pain and spasm, and with constipation or occasionally what is called diarrhœa unrelieved by ordinary remedies and dieting, that the rectum should be examined and the colon carefully palpated, if necessary under an anæsthetic, when, if nothing is discovered, he should be periodically weighed, and if he steadily loses in weight and the symptoms do not seem to clear up that an exploratory incision should be made.

And this brings me to my third and last point—the treatment—first, during an attack of acute obstruction, and, secondly, when the growth is felt or discovered by exploration before acute obstruction has supervened. In either case the indication is to remove the growth and to restore the continuity of the divided intestine. When the symptoms are acute my own experience has led me strongly to advocate dividing the operation into two or even three stages. To attempt a complete operation, which must necessarily be lengthy in a patient with acute obstruction, perhaps of a week or ten days' duration, is to court failure. Both the local and the general conditions are unfavourable. The bowel above the stricture is dilated and distended with liquid fæces and its walls softened or even inflamed, whilst the bowel below is collapsed and shrunken. Notwithstanding the use of clamps to the distended bowel or the drawing off of its contents previously to excising the growth there must be a serious risk of fæcal soiling of the peritoneum even if the growth with the loop of the bowel in which it is situated can be drawn out of the wound, and then there is the further difficulty of uniting the distended portion to the collapsed portion owing to the difference in their calibre. But the growth may not present at the wound and to search for it amongst distended and overcharged coils of intestine which constantly tend to protrude through the incision is a procedure fraught with danger; not only do such manipulations prolong the operation, a most serious fact in itself, but they may cause so much injury of the peritoneal coat of the bowel that the bacillus coli and other micro-organisms contained in the fæces and probably already invading the mucous and muscular coats may penetrate the serous layer and set up acute septic peritonitis. Moreover, the general state of the patient is most unfavourable for any prolonged operation. Think for a moment of the state he is in. His stomach is completely upset by regurgitation of fæcal matter from the intestines, he is exhausted by the constant vomiting and pain and the want of nourishment (for even if nourishment has been given, as is unfortunately too often the case, by the over-anxious friends it is vomited and not assimilated), and his vital powers are depressed by the ptomaine absorption which has been taking place from his over-charged intestines. We all learn by experience, and I have to confess to losing a patient through the desire to complete the operation at one sitting. I was asked to see a man, aged about 60 years, a little distance in the country. He was suffering from an attack of complete abdominal obstruction of some weeks' duration. I diagnosed stricture of the ascending colon and in cutting down on the colon my diagnosis was verified. I removed the growth and united the bowel above to the bowel below by means of a Murphy's button. All went well for from 24 to 36 hours, when the softened intestine above gave way and the patient collapsed and died. I cannot help feeling that had I contented myself with making an artificial anus and subsequently removing the growth and restoring the continuity of the intestine when the effects of the acute obstruction had passed off the result might have been different.

Having given my reasons against resection during an acute attack let me now speak of the practice that my personal experience leads me to advocate. It is as follows. Should the symptoms point to the obstruction being in the sigmoid left inguinal colotomy should be performed and the sigmoid drawn into the wound. If found distended it is clear that the obstruction is below. Now assuming the distension of the abdomen to be great, the patient elderly, feeble, and his condition grave, I advise fixation of the distended coil and its immediate drain by a Paul's tube. This operation should take less than a quarter of an hour, and then in from 10 days to a fortnight's time, or as soon as the abdomen has become flat, the tongue clean, the appetite regained, and the patient's general health sufficiently restored, the growth may be safely dealt with. Thus during the year 1898 a woman, aged 65 years, was admitted under my care into Lawrence Ward. She had frequent attacks of vomiting and constipation and had been losing flesh. Her bowels had not been open for 14 days before admission. Her abdomen was immensely distended; she was constantly vomiting fæcal matter. Left inguinal colotomy was performed. The patient was so desperately ill and the coils of bowel that presented in the wound were so distended that no exploration was made, but the sigmoid was drawn out and a Paul's tube inserted into it. She was at once relieved and progressed satisfactorily in every way. A week or two later a growth was discovered in passing the finger into the bowel through the colotomy wound about three inches down the distal portion of the gut. When her general condition was sufficiently improved a small incision was made below the colotomy woand, the loop of the intestine containing the growth was excised, and the intestine, united end to end by Murphy's button, returned into the peritoneal cavity and the parietal wound closed. 12 days later the button passed out of the rectum. Injections could now be freely thrown from the anus through the colotomy wound and *vice versâ*. Still later the colotomy wound was closed without opening the peritoneum and had quite healed except at one spot when she left the hospital. A fortnight ago one of my dressers visited her at her house in Clerkenwell for me and found her in excellent health without any sign of recurrence and no abdominal trouble whatever. In a second case with similar symptoms of 10 days' duration, pointing to obstruction in the sigmoid, in which the patient's condition was also too serious to admit of any exploration, I resorted to inguinal colotomy and a Paul's tube as in the former case, and here again, when the patient had recovered from the obstructive attack, made an elliptical incision around the colotomy opening, drew out the portion of sigmoid that had been opened at the colotomy together with about six inches of the intestine below, in which I discovered, at about four inches from the colotomy opening, a growth of the size of a Tangerine orange. The sigmoid was divided above the colotomy wound and below the growth, the intervening portion removed, and the ends united by Murphy's button, dropped back into the peritoneal cavity, and the external wound closed by sutures. No enlarged glands were felt in the mesentery. Healing occurred by the first intention and the button was passed on the tenth day. When the patient left the hospital she was in the best possible health and spirits, and my friend Mr. R. Mathews of Bickley, who sent her to me, told me only the other day that her condition was still most satisfactory. In neither of these cases, for reasons already given, was any search for the growth made, my whole aim being to get the patients off the operating-table in the shortest time possible. In a third case, a man, aged 49 years, the symptoms, though severe, were less acute than in the preceding cases. I therefore on finding the sigmoid distended passed my fingers along it towards the pelvis and discovered and drew out a growth. This, together with about two inches of the distended sigmoid above the growth, was fixed in my usual way by an hysterectomy pin passed through the mesentery and a Paul's tube inserted into the bowel above the growth. The operation took less than 20 minutes. Huge quantities of fæces flowed away for the next few days to the immense relief of the patient, who had no bad symptom, and at the end of a fortnight I made an incision around the colotomy wound, drew out healthy sigmoid together with the portion of sigmoid through which the Paul's tube had been inserted, and united the bowel above and below by a large-sized Murphy's button. The united intestine was then replaced and the parietal wound sutured. The button was passed on the twelfth day.

Fortunately for the surgeon carcinomatous stricture is much more common in the sigmoid than in other portions of the colon, but I have met with it in the splenic and hepatic flexure, ascending colon, and cæcum. Time will not permit me to enter upon the question of the diagnosis of the site of the growth—indeed, in any case one can only make an appropriate guess. When in doubt my practice has been first to look at the sigmoid and if this is found collapsed and the distension of the small intestines is great to close the wound and open the cæcum through a second incision on the right side. Where the distension, however, is not great it may be well to trace the sigmoid upwards before opening the cæcum. Quite recently my colleague Mr. Alfred Willett on tracing the sigmoid in such a case came upon the growth in the splenic flexure and with a little traction was able to bring it out of the wound and to insert a Paul's tube into the bowel above. This patient made an excellent recovery from the operation but died later from secondary growths in the viscera. When the cæcum has been opened and the patient's condition has sufficiently improved, if no growth can be detected on palpation or with a finger passed upwards through the colotomy opening it is perhaps better to explore the colon through an incision in the middle line as freer access is in this way gained. In these cases in which the growth can be felt in the line of the colon either with or without an anæsthetic and the symptoms are not acute, the right course is clearly to make an incision over the swelling and remove the carcinoma if feasible, or if not to short-circuit the bowel. I have before me two specimens of the cæcum, one removed eight years ago and the other about a year ago; both patients when last heard of were well.

Finally, a very few words as to where the exploratory incision should be made where the symptoms lead us to suspect a stricture but no growth can be felt, there are no indications as to its situation, and acute obstruction has not supervened. For such cases a median hypogastric incision is preferable, since through it not only the condition of the colon but that of the small intestine can be investigated as well. Thus, in a case of the kind on which I operated quite recently at Bromley the stricture, contrary to our expectation, was in the small intestine and was readily dealt with through this incision. Had the growth been in the colon and inaccessible from the median incision, after locating its actual position I should have made a second incision over it and dealt with it there.

In conclusion, let me briefly recapitulate the points I have endeavoured to make out: first, that the columnar-celled carcinoma is one of the least malignant of the cancers, and although it may have led to almost complete stenosis of the gut there may still be no dissemination; secondly, since, as in other forms of carcinoma, dissemination at length occurs it is desirable where symptoms such as have been mentioned are present to make an exploratory incision; and lastly, if acute obstruction has supervened the safest course is merely to open the colon above the growth and to deal with the latter after the acute stage has subsided.

THE SERO-THERAPEUTICS OF PLAGUE.

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IN giving an account of my experience of the treatment of patients suffering from plague with Yersin's serum, as received from the Pasteur Institute of Paris, it may be well to point out that the disease as it occurred in Glasgow was apparently of a much milder type than is that usually seen in the East. The number of cases was too small to admit of statistical comparison between those treated with the serum and those not so treated, and on account of the mild character of the epidemic comparison with the statistics of other epidemics in other countries is not possible. Consequently the value of the treatment can only be gauged by a careful consideration of each case in detail.

The first two cases in which the serum was given were those of T. H—— and C. M——, already reported in THE LANCET.[1] In both these cases the only organism obtained in puncturing the buboes was the bacillus pestis. The first of these cases belonged to the septicæmic variety of plague with multiple bubo. The prognosis was bad. Within 36 hours of the administration of the serum the temperature fell nearly to normal and the patient was apparently out of danger. In the second case, which appeared to be an example of the fulminant type of plague, an injection of 20 cubic centimetres of the serum intravenously and of a like amount subcutaneously was followed within 24 hours by a complete cessation of symptoms. Both patients were excessively ill and in both the subsidence of the symptoms was marked and immediate. There were, it is true, some cases of plague untreated by the serum in which there was a critical fall in the temperature, but in these the disappearance of the mental obscuration which accompanied the fever was much more gradual and the convalescence more tedious. In both the cases under consideration a symptom was present not observed in any of the other cases which ended by crisis—viz., a few hours after the injection a copious sweating occurred over the whole body.

The next three persons treated by serum suffered from a milder type of the disease; in only one was the prognosis doubtful. The first, Mrs. B—— (Case 1), was a case with right inguinal bubo from which on puncture a pure culture of bacillus pestis was obtained. The patient on admission did not seem sufficiently ill to require an injection of the serum, but two days later, as the symptoms had considerably advanced, 20 cubic centimetres were injected subcutaneously into the abdominal wall. The next day the symptoms had somewhat abated. The pain in the bubo was less and the reddening of the skin over the swelling was not so marked. In the evening, however, the patient's condition was again not so good, and by the following morning the temperature had again risen. The local condition had advanced and the infective process had extended so as to involve the lymphatic glands above Poupart's ligament and also the deep inguinal glands. A further injection of 20 cubic centimetres of the serum was then given, this time into one of the veins of the right arm. An immediate improvement was noted. Six hours after the administration of the serum the temperature had become normal and on this occasion no subsequent rise took place such as had occurred after the former dose administered subcutaneously. In a second instance the result was equally interesting. The case was that of Mary M—— (Case 2). This patient, a girl, 14 years of age, suffered from a bubo in the left axilla. The point of entry of the infection was evidently located in the back, where, as described in the full report, a small pustule was situated, which was proved bacteriologically to contain the plague bacillus. The external local condition afforded a visible index by which the therapeutic effect of the remedy could be gauged. Here again a subcutaneous injection of the serum was followed by a temporary improvement as regards the bubo, the pain being considerably less on the next day, but no improvement could be seen in the pustule above mentioned. A recrudescence of the disease occurred likewise in this case, with a rise of temperature to 102°F. A second pustule began to form on the back, while the erythematous zone surrounding the first occurring pustule became rather larger. Here again the intravenous injection of the serum in a dose of 20 cubic centimetres was followed by an immediate improvement. Within 24 hours a slough in the centre of the original pustule had separated and the inflammatory zone had almost disappeared, while the second commencing pustule had completely aborted. The patient six hours after the administration of the last dose of serum spontaneously expressed herself as feeling very much better. The temperature by the same time had fallen to normal and, as in the other case just mentioned, it remained so without subsequent rise. Convalescence from this point was rapid and uninterrupted. The third case belonging to this group was that of Mrs. M—— (Case 3). This patient, the mother of the preceding one, was aged 41 years. She had a right inguinal bubo. On admission the temperature was 102·4° F., the pulse was 104, and the respirations were 24. The patient was evidently ill, though a fatal issue was not expected. A subcutaneous injection of 20 cubic centimetres of the serum produced almost no effect, but there was, if anything, next

[1] For particulars of these and of other cases of plague in Glasgow see THE LANCET of Sept. 8th (p. 756), 15th (p. 827), 22nd (p. 897), and 29th (p. 984), 1900.

day a lessening of the pain in the bubo. Thirty-six hours later a second injection of 20 cubic centimetres was given intravenously. As in the other two cases just noted, there was observed an almost immediate improvement, the patient expressing herself as being much better six hours after the remedy had been administered. The temperature fell to normal within 24 hours and remained there.

The points to be noted with regard to all these cases are that the subcutaneous injection of the remedy produced little effect, and that of a temporary nature, while the administration of the serum intravenously was followed in each case by an improvement which was easily seen in the subsidence of the signs of illness and which besides was spontaneously borne witness to by the patients themselves.

The serum was also administered to four persons in whom the disease progressed to a fatal issue. One of these needs no mention, as he did not come under treatment till the fourth week of the illness, at which period an extensive secondary pyogenic infection of the sloughing bubo had occurred. Each of the other three require special notice. The first of these in point of time was Mrs. M—— (Case 4). This patient was the daughter of the last-mentioned patient and the sister of M. M——, also already referred to. She had for some time prior to the onset of illness experienced considerable privation. On admission she was extremely ill and premature labour was in progress. No apparent benefit resulted from the administration of the remedy, the patient dying within about three days from the commencement of the illness. In this case serum was administered on the evening of admission—20 cubic centimetres into a vein of the right arm and 20 cubic centimetres into the subcutaneous tissue of the flexure surface of the left thigh, so that it might drain directly into the bubo, which was situated in the left groin. Next day 20 cubic centimetres additional were administered into the subcutaneous tissue of the abdomen. Though only the plague bacillus was obtained on culture from the bubo in this case both before and after death, yet in the retro-peritoneal glands it was demonstrated that the infection was a mixed one, as considerable numbers of colonies of a diplococcus, staining by Gram's method, were seen in sections of these. This patient was so enfeebled by the privation which she had undergone that she would in all probability not have survived her confinement apart from the attack of plague. So that, both because the case was not uncomplicated and because of the patient's weakness, the result cannot be said to weigh one way or the other in appraising the value of the serum treatment. But it must be noted, as indicating that the serum had some considerable influence on the organism, that the bubo revealed on examination after death no plague bacillary forms which did not bear evidence of the most profound degeneration, while those obtained from the other organs of the body showed no evidence of being in any way altered. On the same day the brother of this patient was admitted (R. M——, aged 11 years, Case 5). His history, which is recorded below, indicates that the infection here also was from the first of a mixed nature. When in the course of the second week of observation one of the buboes had proceeded to abscess the only organism recovered from the discharge after incision was the staphylococcus pyogenes aureus, and that in great numbers. As there were no means of infection of this bubo prior to its incision, it is highly probable, considering the septic course of the temperature, that the double infection was primary. Of all the cases treated with serum early in the course of the illness this is the only one in which no effect of any kind was noted. The only other case in which the serum was administered was that of M. G—— (Case 6). This was, though fatal, one of the most interesting in some of its features. The patient was a child, six years old. (Puncture of the bubo in the right groin on admission resulted in the discovery of the plague bacillus in its typical forms.) On admission she was profoundly ill and in a state of almost complete unconsciousness. When disturbed she cried out harshly and struggled to be let alone, but otherwise took no notice of her environment. As recorded in the report, intravenous injection was attempted without success, but in the first 48 hours after admission she received 100 cubic centimetres of the serum into the subcutaneous tissue, chiefly of the lower part of the abdomen. On the morning of the fourth day after admission a marked improvement was noted, insomuch that the child for the first time recognised her mother and smiled to her. From this point, however, there was a rapid advance in the gravity of the case, and death supervened with the usual symptoms of heart failure on the eighth day of illness. The same appearance was noted in this case as in that of Mrs. M. (Case 3) above referred to—viz., that the bacilli found in the bubo which received the drain of a large part of the serum administered were markedly degenerated, while those in the deeper organs of the body were unaffected and very virulent.

A general review of the action of Yersin's serum falls to be considered under two heads—firstly, the prophylactic action; and secondly, the curative action.

1. *The preventive action of the anti-plague serum.*—Of the healthy persons who had been in contact with plague and who received a prophylactic injection of the anti-plague serum two developed the disease. One of these was a maid attached to the service of the plague wards. From her buboes the specific bacillus of plague was recovered, and at the appropriate time after the disease was over her blood gave the typical agglutinative reaction in a marked degree. The other (Mrs. G——, Case 7) was the mother of one of the patients who died and who is noted above (M. G——, Case 6). During the course of the disease the pyrexia was fairly high, but she never gave the impression that she was dangerously ill. The three factors which might have contributed to produce this high temperature are noted in the annexed report. These two cases prove that a dose of 10 cubic centimetres of Yersin's serum administered subcutaneously does not afford complete protection, yet it is a fair presumption that a certain degree of immunity is afforded, as the symptoms in both cases were of great mildness. This corresponds with what has been frequently observed with regard to the action of diphtheria antitoxin when used as a prophylactic. Immunity is not a certainty, but if the disease becomes established the attack is almost certain to be slight.

2. *Curative action.*—A general review of the facts given above and a consideration of the reports of the individual cases will, I think, justify the following conclusions: First, that subcutaneous injection of the serum is not of any great curative value. This is probably not due to the blocking of the lymphatics during an attack of plague, as has been suggested by some, in view of the fact that absorption of the serum by healthy persons is no more rapid than that seen in the plague patients. The failure in action is therefore much more likely the result of the lymphatic system exercising a distinct action as a biological filter on the serum, such as exists in other organs. In this way the antitoxic substances of the serum are retained largely in the glands which drain the area into which the injection is given, so that only the more inert portions of the serum reach the general circulation. It was noticed that the lymphatic glands connected with the area into which the injection was made in healthy persons enlarged for some days thereafter. This is not a proof that such a filtering action as above indicated takes place, yet it shows that some constituent of the serum having an irritant action is retained, and if the glands possess the power of filtering out certain ingredients of the serum there is no reason to doubt, in the light of what has gone before, that this may include the active antitoxin. The case of Mrs. M—— (Case 4) lends some clinical support to this view. The inguinal bubo, into the drainage area of which the serum had been injected, showed post-mortem evidence of a potent local effect in the marked degeneration of the bacilli, while the organisms found in other parts of the body were quite normal. It is therefore evident that subcutaneous injection of the serum can be efficient only in cases where the infection is localised to a bubo and has not become general. Secondly, the intravenous injection of the serum seems, in most cases, to produce a most marked therapeutic effect, even when given late in the disease. This is exemplified in the case of T. H——. In those cases, on the other hand, where double infection has existed from the beginning, its action is greatly lessened. In conclusion, it is probable that the doses given were in general too small, and should an opportunity again arise of using this remedy large initial doses of 60 cubic centimetres and upwards would be given intravenously. Probably it would be advisable, if using the serum subcutaneously at all, to inject it only into the area drained by the lymphatic system which leads directly to the bubo.

CASE 2.—Mary M——, aged 14 years, was admitted on Sept. 15th, 1900. The patient on the night prior to admission became gradually very ill with severe frontal headache. On

the day of admission sickness and vomiting were the most prominent symptoms, but she also complained of a tender swelling in her left axilla. On admission the temperature was 99·8° F., the pulse was 120, and the respirations were 28. The face was of an earthy colour with an anxious look, the lips were dry, and the skin was hot to the touch. The tongue was dry over the dorsum, but the edges were red and moist. There was no rash. Four inches from the base of the axilla there was a single small, hard, tender gland which was freely moveable; at the border of the latissimus dorsi behind there was another gland rather more obvious, but not so tender. No other complaints were made at the time of admission. No serum was given as the patient did not appear to be particularly ill. Next evening the temperature had risen to 101·5°. It was then noticed for the first time that the patient had on the back, about the level of the spine of the eighth dorsal vertebra, a small pustule. This pustule showed certain distinctive features. It was about a quarter of an inch in diameter, the centre being depressed and covered by a scab while the edge was raised and formed of a ring of minute pustules. An inflammatory zone of about two and a half inches surrounded this pustule. Direct microscopical examination of the material obtained from the pustule showed the presence of numerous quite characteristic plague bacilli, whilst in many of the leucocytes degenerating forms of the same organism were apparent. Cultures were made and a characteristic growth of the organism was obtained. Twenty cubic centimetres of serum were injected subcutaneously. Next day (Sept. 17th) the temperature had fallen to normal and the patient was somewhat better; but although the gland in the axilla was a little less tender the pustule showed no signs of diminishing. In the evening another area of congestion appeared on the left flank. The following morning the patient's temperature was 102° and she was apparently considerably worse. The second area of inflamed skin had now a yellowish centre, as if of commencing pustulation. At mid-day 20 cubic centimetres of serum were injected into the right median basilic vein. In the evening the patient spontaneously expressed herself very much better and her temperature was normal. Next day (Sept. 19th) the patient felt very well. The slough in the centre of the pustule had separated, leaving a healthy granulating surface, and the second erythematous area in the flank had almost completely disappeared. From this point convalescence was uninterrupted.

CASE 4.—Mrs. M.——, aged 20 years, was admitted on Sept. 15th, 1900. The duration of the illness was a little doubtful, owing to the difficulty of obtaining an accurate history of the patient from her friends. It was, however, certainly under 48 hours. The onset had apparently been very severe, headache, pain in the back, diarrhœa, and great prostration being the most marked symptoms. The patient was very much emaciated, and had undergone great privation for some time prior to admission. The face was pallid, the lips were dry and covered with sordes, and the tongue was likewise dry with a brown fur. The temperature was 102·6° F.; the pulse, which was soft and rapid, numbered 140; and the respirations were 40. The patient was eight and a half months pregnant, and on admission labour was already in progress. The only physical signs observed in the lungs were some subcrepitant râles at both bases. There was a large, indurated, and very tender bubo in the left inguinal region. No rash was observed. On the evening of admission 20 cubic centimetres of serum were injected intravenously and 20 cubic centimetres into the area immediately below the left groin, so that it might drain directly into the bubo. At the time of the injection the temperature had fallen to 99·6°, and the patient was much collapsed. At 4 A.M. the os was found to be fully dilated, and as by this time the patient's general condition was one of extreme gravity instrumental delivery was at once effected. The child was born asphyxiated, and after much trouble was resuscitated. No gross lesion of the placenta could be observed. After the birth of the child the patient rallied a little. The temperature rose to 103·8°; the tongue and lips became cleaner and moister, and the patient expressed herself as feeling a little better. On Sept. 16th 20 additional cubic centimetres of serum were injected subcutaneously into the abdominal wall. During the day the patient's state became more and more grave, and she died at 11.50 P.M. A pure culture of the plague bacillus was obtained from the bubo on admission, and also from the blood. On examining the bubo after death no plague bacillary forms which did not bear evidence of the most profound degeneration could be discovered, though in the spleen and other organs of the body typical unaltered forms were easily seen.

CASE 3.—Mrs. M——, aged 41 years, was admitted on Sept. 16th, 1900. The history of the illness was a little difficult to obtain accurately as the patient was considerably out of sorts for some weeks, but it probably began two days prior to admission. The chief symptoms were severe headache and general malaise; on the day prior to admission she noticed a small tender swelling in the right groin. On admission the temperature was 102·4° F., the pulse was 104, and the respirations were 24. The patient complained of very severe headache. The tongue was dry and the face was very anxious-looking. In the right groin there was a small bubo of about the size of a pigeon's egg which was exceedingly tender. There was also some induration in the tissues round the gland, but the skin was not adherent. The bowels were constipated. The patient was evidently ill. On the evening of admission 20 cubic centimetres of serum were injected into the abdominal wall. Next day there was no change in the patient's condition, with the exception of the fact that the bubo was, if anything, less tender, and as on the 18th no further improvement had taken place 20 cubic centimetres of the serum were injected into a vein of the right arm. In the evening great improvement had taken place in the patient's sense of well-being and she expressed herself as feeling very much better. The tongue was more moist, the headache had gone, and the pain in the bubo was much less. From this point convalescence was good, no rise of temperature occurring subsequently.

CASE 1.—Mrs. B——, aged 29 years, was admitted on Sept. 14th, 1900. The patient was the wife of one of those who were engaged in the removal of plague-infected clothing and was probably infected by her husband. The illness began on the day prior to admission with severe frontal headache and rigor, pains in the limbs, and severe pain in the back. There was no sickness, vomiting, or diarrhœa. On the morning of the day of admission pain was felt in the right groin and on examining this region she perceived a small lump, which was very tender to the touch. The temperature on admission was 100·8° F., the pulse was 96, and the respirations were 32. On admission the patient did not look very ill, but the face was somewhat flushed and anxious. The eyes were slightly injected and the pupils were normal. The tongue was moist and slightly furred. The heart and lungs, on physical examination, showed nothing noteworthy, with the exception of a few wheezing râles. A bubo was present in the right groin, chiefly involving the horizontal chain of lymphatic glands below Poupart's ligament. The vertical chain was only slightly involved, and there was some œdema in the surrounding connective tissue. The skin in Scarpa's triangle was reddened. This bubo was exceedingly tender. Next day the patient was somewhat better and as the temperature had fallen no serum was given. On the 16th the temperature was still normal, but the symptoms advanced during the day, and in the evening the temperature rose to 101·2°. The bubo was now considerably larger, the connective tissue more œdematous, and the skin more inflamed. 20 cubic centimetres of serum were therefore injected into the skin of the abdomen. Next day the temperature had fallen and the pain in the bubo considerably abated. On the morning of the 18th, however, the local conditions had again advanced, with extension above Poupart's ligament to the deep inguinal glands. The œdema was much increased and the redness had extended down the side of the thigh. Consequently 20 cubic centimetres of serum were injected into a vein of the right arm. Towards evening a great improvement in the patient's condition had taken place and she both looked and felt very much better. Next day the temperature was normal and falling to slightly sub-normal in the evening remained so. Improvement was rapid; the bubo softened and ruptured spontaneously on Sept. 23rd. Convalescence was good. A pure culture of the plague bacillus was obtained on admission from the bubo. On rupture the discharge proved sterile but contained many degenerate forms of bacilli, some being free and others contained in the leucocytes.

CASE 5.—R. M——, aged 12 years, was admitted on Sept. 16th, 1900. The patient became ill on the evening of Sept. 14th with slight headache. Next morning he was much prostrated and the headache had become very severe. He also made complaint of acute pain in the left axilla, and this seems to have been from that time up to his admission to hospital his most clamant symptom. No history of rigor, sickness, or vomiting could be obtained. On admission his

temperature was 102·4° F., the pulse numbered 130, and the respirations were 36. The patient looked very ill. The face had the characteristic ashy pallor, with drawn brows. The lips were dry and fissured; the tongue was dry and brown on the dorsum, but moist and red at the edges. The eyes were clear and the conjunctivæ were not injected. There was some mental obscuration, dependent partly on the grave prostration, but partly, also, on his continual dread of the pain consequent on his being even carefully handled. The slightest movement caused the most acute pain, referred chiefly to the left axilla. Palpation in this region revealed the presence of a small indurated gland, which was very tender. Unlike, however, what had been observed in other cases, the tenderness was not limited to the immediate neighbourhood of this bubo, but extended to the outer portion of the pectoral region. Physical examination of the lungs revealed nothing noteworthy beyond a few localised patches of crepitant râle. There was no dyspnœa and no evidence of pulmonary engorgement. The heart's action was very feeble, and the apex impulse was widely diffused. The pulse was full and bounding, but of very poor tension. The spleen was not enlarged. The urine contained no albumin. The bowels were constipated. Twenty cubic centimetres of serum were injected subcutaneously and also 20 cubic centimetres into the right median cephalic vein on the evening of admission. On Sept. 17th the patient's general condition seemed rather better, the tongue being moister and the expression of the face less anxious. There was also less tenderness in the left axilla. On the 18th his condition was worse and an additional dose of 20 cubic centimetres of serum was injected subcutaneously in the afternoon. On the 19th 20 cubic centimetres were injected intravenously. Next day there was no apparent improvement, the respirations were more frequent, and an increased amount of crepitant râle was audible over both lungs. There was, however, no cough and no sputum could be obtained. At the outer part of the left pectoral region was an indefinite swelling, feeling, on palpation, as if situated under the pectoral muscle, suggestive of deep abscess formation. The axillary bubo was no longer tender. As the temperature since admission seemed to indicate a pyogenic infection, and as the serum had no effect on its course, no more serum was given, on the assumption that the patient was now suffering from the effects of a double infection rather than from plague alone. This supposition was borne out by the alleviation of the pain and tenderness at the site of the bubo and the recent swelling under the pectoral muscle. By the 25th this swelling gave definite signs of deep fluctuation and was incised after freezing the skin, giving exit to a sero-purulent fluid which, on cultivation, gave a pure culture of the staphylococcus aureus, but no bacillus pestis was isolated. The abscess was found to be situated under the pectoralis minor. From this time the patient's condition became rapidly worse and he died on Sept. 28th. The respirations were very rapid, but the patient was so ill that he was not disturbed by physical examination. Throughout the urine remained free from albumin, except on Sept. 22nd and 23rd, when the specimens obtained showed a faint trace.

CASE 7.—Mrs. G——, aged 24 years, was admitted on Sept. 19th, 1900. The patient became ill on the day prior to admission. The initial symptoms were not of great severity, slight headache and a feeling of general malaise only being complained of. Coincident with these symptoms a tender swelling was discovered by the patient herself in the right groin. It is to be noted, however, as accounting, perhaps, for the comparative mildness of the onset, that seven days prior to the commencement of illness she had received a prophylactic injection of 10 cubic centimetres of Yersin's curative serum. On admission she did not look as if she were very ill. Frontal headache of moderate severity was complained of, and in the right groin involving the vertical chain of glands the above-mentioned swelling, which was of about the size of a walnut, was observed. The glands were more or less adherent to one another and also to the subjacent tissues, but the overlying skin was freely moveable and not inflamed. The tongue was moist and clean; the bowels were constipated. The illness had interrupted the suckling of a three-months-old child, and on this account the breasts were enlarged and tender. The course of the illness, however, was short, lasting in all about five days, and the only clamant symptom complained of was the frontal headache. The fever was maintained at a high level for two or three days, ranging between 100° and 104° F., but other symptoms were not present in like severity. The pyrexia might be regarded as due to three factors—first, the attack of plague, probably the most important; secondly, the condition of the breasts, which became very large and tender; and thirdly, serum fever. The maximum temperature occurred on the ninth and tenth days after the prophylactic injection of serum—i.e., at the period when the pyrexia due to serum usually made its appearance. On Oct. 4th spontaneous rupture of the bubo took place and from the discharges obtained on that day virulent plague bacilli were recovered. From this point onwards convalescence was rapid and complete.

CASE 6.—Mary G——, aged six years, was admitted on Sept. 19th, 1900. This patient, who was the daughter of Mrs. G—— (Case 10[2]) and the niece of Charles McM—— (Case 1[2]), became ill on the day prior to admission with severe prostration and headache. On admission the patient's temperature was 101·2° F., the pulse was 146, and the respirations were 44. The aspect was that of a person acutely ill. The face was pale and somewhat cyanotic; the lips were dry and blue. The tongue was dry over the dorsum, but the edges were moist and clean. The child lay in a semi-comatose state and did not even recognise her mother who lay in the next bed. The right inguinal region was the seat of a swelling of about the size of a hen's egg and on examination this was seen to consist of a mass of enlarged and tender lymphatic glands. There was also some periglandular infiltration but no reddening of the skin. Examination of the lungs failed to detect anything noteworthy. On the evening of admission intravenous injection of the curative serum was attempted, but without success as the veins were very thin-walled and deeply embedded in a thick layer of adipose tissue. Twenty cubic centimetres of serum were therefore injected subcutaneously into the wall of the abdomen. Next evening the child was rather worse; the temperature was somewhat higher and the pulse was softer and more compressible. A second attempt to inject serum into a vein failed, and accordingly 40 cubic centimetres were again injected into the wall of the abdomen. The following morning the patient's condition was, if anything, slightly better, though she was still more or less unconscious. The pulse, however, was firmer, and the respirations were somewhat slower. A third attempt at intravenous injection having failed, 40 cubic centimetres of serum were injected for the third time into the abdominal wall. In the evening a very marked improvement was observed, the child having regained her natural colour, and being now quite conscious for the first time. She smilingly recognised her mother. The improvement, however, was not maintained beyond the following morning. On the evening of the 22nd the temperature again rose, and the pulse became very feeble. From this point onward the patient sank steadily. Death was associated with marked hypostatic congestion of the lungs, and was directly due to heart failure. No additional serum was given on account perhaps of undue timidity, for, as by this time moderately severe constitutional disturbance following on small doses of the serum had been frequently observed in healthy persons it was not deemed advisable to persevere with the treatment.

Glasgow.

A CASE OF PRIMARY HÆMORRHAGIC OTITIS MEDIA.

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THE patient was a very intelligent hospital nurse, aged 35 years, who had just been enjoying a three months' holiday and had not resumed work. She had not been exposed to cold and had not suffered from earache, otorrhœa, or ear trouble of any kind until Nov. 13th, 1900, when at 8 P.M., two hours before retiring for the night, she began to suffer from noises which were referred to the back of the head, and which were about equally distinct on both sides of the middle line at about the level of the lambdoid suture. The noises were like bells ringing or water boiling. When the patient went to bed and lay down the sounds were no longer noticed. Excruciating pain was now for the first time experienced in the occipital region

[2] THE LANCET, Sept. 29th, 1900, p. 964.

exactly where the noises had previously been. The patient was kept awake owing to the severity of the pain which became worse and worse for four hours, when at 2 A.M. the next day she experienced a feeling of something bursting inside the head at a point distinctly located just to the left of the occiput, no pain or other disturbance having been felt during all this time in either ear. The patient was therefore much surprised to observe that the sensation of something having given way in the back of the head was followed at once by a rapid flow of blood from the left ear, nothing coming from the right side. The blood was bright red at first and then darker. Two handkerchiefs were used to stanch the blood, though these were not saturated right through. The bleeding continued from 2 to 11 A.M., but by 9 A.M. the discharge had become as pale as serum, and between 9 and 11 A.M. only a few drops of this pale serum escaped. After the bursting sensation described the pain was at once considerably relieved, but though it became less severe it did not completely terminate. The patient could stand and there was never any giddiness until syringing of the left ear was ordered, thrice daily, by the medical attendant on the same day that the hæmorrhage ceased. Syringing was continued for two more days and then no further treatment was applied until the case came under my immediate care on Nov. 29th, 16 days after the onset of the symptoms. The pain in the back of the head had continued up to this date, being referred to the mid-line of the occiput and not being more marked on one side than on the other. The pain—except on the first night of the attack—had never been acute, but was dull and aching in character, and recently it had become decidedly less marked. Occasionally, especially on rising, the patient suffered from sensations of "swimming" in the head. Though she was not liable to catch cold she had suffered from relaxed throat when "run down." There was no family history of tuberculosis. She had never suffered from scarlet fever or measles.

Examination on Nov. 29th showed the hearing for ordinary conversation to be very good; the ticking of a watch, however, was heard by both ears at a distance of two and a quarter feet, only about half the normal distance for this watch. The left membrana tympani showed a large perforation involving most of the postero-superior quadrant and being almost occluded by dark blood-clot, Shrapnell's membrane also being dotted over with dried fragments of clot. The membrane elsewhere was somewhat opaque, retracted, and over-cupped. The right membrana tympani was rather thicker and more opaque than normal and over-cupped. A line of congestion was evident along the posterior border of the handle of the malleus. There was no sign of any previous perforation. Examination of the nasal fossæ, naso-pharynx, fauces, &c., showed both inferior turbinates and the right middle turbinate to be hypertrophied; there were chronic naso-pharyngitis with secretion and large granules on the back of the pharynx, &c., and a relaxed uvula, and the tonsils were a little enlarged. A specimen of urine obtained on the fifth morning after the initial attack was clear, of normal colour and odour, moderately acid, and of specific gravity 1027. No blood or trace of albumin or sugar was present. A well-marked indican ring was given with nitric acid; no bile was present. Examination of the chest showed that the heart and lungs were normal and that the pulse was quite normal in rate, force, and rhythm. Ophthalmoscopic examination showed both discs to be perfectly normal. Menstruation was scanty but fairly regular, seven-weekly, occurring never more frequently; there had been no periods of amenorrhœa recently.

By way of treatment gentle syringing with warm boric lotion twice a day to remove the blood-clot, &c., was ordered and rest for some days advised. When seen a week later (Dec. 6th) the patient reported that she had suffered from occipital headache and "singing" or "frying" noises in the left ear four days previously, but since that date there had been no headache or giddiness. She felt perfectly well. Examination of the left membrana tympani showed the blood-clot first noticed to have largely disappeared, leaving pieces of it thinly scattered about and allowing easier inspection of the interior of the middle ear through the perforation now rapidly closing. The head of the malleus, the incus, and apparently the chorda tympani were visible, as well as fragments of blood-clot lining in the inner wall of the tympanum. A watch was heard at a distance of 27 inches on the left side, compared with 41 or 42 inches on the right side. Self-inflation of the membranes by Valsalva's method could not be obtained on either side.

The patient was seen again on Feb. 27th, 1901. She was then perfectly well, but had had four attacks of headache located just above the external occipital protuberance. These had occurred quite suddenly, twice in December and twice in January. She attributed them to unusual exertion and anxiety in nursing cases of influenza. As well as suffering from headache the patient was giddy and vomited. She said that she very often felt slightly giddy apart from the onset of headache. She had also suffered from severe attacks of toothache lasting 12 hours or less. There had been no attacks of pain anywhere during February, but though the teeth were not painful she was confined to bed for four days with the left side of the face very much swollen, the temperature one night rising to 103° F. Examination of the left ear now showed that the perforation in the membrane was rapidly closing and all traces of clot had disappeared. There had never been any escape of blood or discharge since the initial attack on the night of Nov. 13th, 1900. The hearing remained unaltered.

The patient has been seen on several occasions since and she remains—it is now some 10 months since the initial attack—perfectly free from the symptoms described. The hearing has improved and is practically normal on both sides, as tested by watch.

Remarks.—The sudden onset of subjective noises referred to the occiput, followed by rapidly increasing pains also referred to the occipital region far away from the ear, occurring in the dead of night, was naturally most alarming, particularly as there had been nothing to direct attention to the mischief in the ears. Though there was quick relief from the excruciating pain with the escape of blood from the ear, the rapid evacuation of bright red blood enough to soak two handkerchiefs, following upon a sensation of something bursting in the head, would necessarily at first give rise to considerable anxiety as to whether there was grave intracranial mischief, aneurysm, softening sarcoma, &c. The normal fundi and the rapid recovery to perfect health without subsequent hæmorrhage or other discharge from the ear would exclude such grave mischief. The condition of the urine (with that of the optic discs) and the menstrual history would, respectively, serve to exclude renal trouble or the possibility of vicarious menstruation. The patient, who was of florid type, was at the time of the attack in excellent health after a three months' holiday, and there was nothing to suggest unusual anæmia as a possible cause for the hæmorrhage. The nasal and naso-pharyngeal condition, only brought to notice by my investigation after the onset of the acute hæmorrhage from the ear, serves to explain the mode of origin of the trouble, which had evidently followed long-standing but unsuspected Eustachian catarrh. For some as yet unknown reason acute otitis media appears to have occurred on the first day of symptoms. No history of exposure to cold could be obtained, though this is one of the common causes of this not very common condition, which Roosa first described (McBride). Owing probably to the diminished air pressure within the tympanum, as McBride suggests,[1] consequent upon previously existing Eustachian catarrh, rupture of vessels in the congested mucous lining of the tympanic cavity occurred, thus cutting short the inflammatory process at the stage of vascular engorgement, before inflammation had proceeded to the stage of suppuration. It is noteworthy that at no period, either before or after the acute pain and hæmorrhage, was there a purulent discharge from the middle ear. The condition was evidently, therefore, one of primary hæmorrhagic otitis media, the course of the disease, only four hours elapsing between the onset of intense pain and rupture of the tympanic membrane, with evacuation of almost pure blood at first and then serum, being typical.

[1] Diseases of the Nose, Throat, and Ear, p. 542, third edition, 1900.

COCKLES AND TYPHOID FEVER.—At the meeting of the Kingsbridge (Devon) Urban Council held on August 7th the medical officer of health reported a case of typhoid fever which he attributed to eating cockles caught in the estuary of the river. He added that the sewage was carried where the cockles were caught and at his suggestion it was decided to issue handbills immediately warning people of the danger of eating shell-fish caught at the mouth of the river.

EXPERIMENTS WITH THE DANYSZ RAT BACILLUS.

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THAT the rat has been instrumental in spreading and communicating bubonic plague to the human subject is a statement which has been well established by past experience, and it has therefore become a matter of great importance to all medical officers of health, notably those connected with seaports, to find means by which rats in docks, harbours, sewers, warehouses, &c., could readily and quickly be destroyed on a large scale without any deleterious effects on other animals. As is well known, Danysz maintains that the bacillus which is known as the Danysz rat bacillus achieves this by giving to rats an acute, fatal septicæmic disease which, by ingestion of the bodies of infected and dead animals, rapidly spreads amongst them and consequently readily destroys them or causes them to migrate from the locality. Experiments were instituted both in the laboratory and on a large scale in one of the warehouses of a dock in the Port of London in order to test this alleged destructiveness of the Danysz cultures and of animals dead after injection with such cultures.

The Danysz bacillus by its morphological and cultural characters belongs to the tribe of virulent coli bacilli. It differs from the typical bacillus coli communis by its great motility, its not coagulating milk or forming indol in broth, and its high degree of virulence on rodents; but by its aspect in surface and plate culture, its formation of gas in shake culture, and its acid production in broth and in litmus milk it is clearly a coli bacillus. When inoculated subcutaneously or intra-peritoneally into rodents it causes death, the rapidity of the fatal issue depending on the amount and virulence of the dose. Gelatine culture and serum culture of recent date act more virulently than those of other media (e.g., broth, agar) and the virulence of the former is greater when the culture is derived from a rodent (guinea-pig, mouse) which has died from the acute disease. As an example of a culture possessing a high degree of virulence the subcutaneous injection of from five to 10 divisions of a Pravaz's syringe of a slightly turbid emulsion of the growth into the groin of a guinea-pig of from 200 to 300 grammes weight should cause death of the animal in between 20 and 46 hours. In this case the subcutaneous tissue of the abdomen is swollen and infiltrated with a gelatinous, sanguineous, fluid densely filled with the bacilli, the infiltration extending generally also into the subcutaneous tissue of the thigh and chest. The viscera are much congested and the blood contains also the bacilli in great numbers. Animals dead after being fed on mice or rats which have been killed by subcutaneous injection of cultures of Danysz bacilli show congestion of the viscera, especially the intestines, the bacillus being found abundantly in the spleen and blood.

The point to be determined was whether, as Danysz maintains, the culture of this bacillus is capable of causing death in a large percentage of rats fed on it. On this point the opinions of various observers differ; while, for instance, Kister and Köttgen of Hamburg[1] to a certain extent confirm Danysz's statement, others, like Krausz,[2] failed to confirm it.

1. *Experiments in the laboratory.*—There is no difficulty

TABLE SHOWING THE RESULTS OF EXPERIMENTS OF FEEDING RATS ON MATERIALS MIXED WITH DANYSZ BACILLUS.

Date.	Material used.	How used.	Remarks.	Result.
1901.				
April 23rd	24 tubes of Dr. Danysz's rat virus.	Mixed with bread and laid on floors of warehouse.	April 24th, bread laid down on previous day eaten.	Negative.
,, 26th			,, 27th, ,,	,,
,, 30th			May 1st, ,, ,,	,,
May 3rd			,, 4th, ,, ,,	,,
,, 8th	24 tubes ditto.	,, ,,	May 10th, bread eaten.	,,
,, 11th		,, ,,	,, 13th, ,, ,,	,,
,, 15th		Mixed with water and placed on floor in tins.	May 16th, water not drunk by rats.	,,
,, 16th		Mixed with bread and laid on floors of warehouse.	May 17th, bread eaten.	,,
,, 22nd	12 tubes ditto.	,, ,,	May 24th, bread eaten.	,,
,, 25th		,, ,,	,, 26th, ,,	,,
,, 28th		,, ,,	,, 29th, ,,	,,
,, 31st		,, ,,	June 3rd, ,,	,,
June 14th	Five guinea-pigs dead after subcutaneous injection with Danysz culture.	Laid on floors of warehouse.	June 15th, four guinea-pigs eaten; June 17th, one guinea-pig eaten.	,,
,, 26th	22 mice dead after subcutaneous injection with Danysz culture.	,, ,,	June 27th, nine mice eaten.	,,
,, 27th			June 28th, nine mice eaten; June 29th, one mouse eaten; July 1st, three mice eaten.	,,
July 15th	Four guinea-pigs and one rat dead after subcutaneous injection with Danysz virus.	,, ,,	July 16th, three guinea-pigs eaten; July 17th, one guinea-pig eaten; July 19th, the rat was found on this date to be untouched and being putrid was burnt.	,,
,, 17th	Eight guinea-pigs dead after subcutaneous injection with Danysz virus.	,, ,,	July 18th, two guinea-pigs eaten; July 19th, one guinea-pig eaten; July 20th, the remaining five guinea-pigs were found untouched and full of maggots, they were therefore burnt.*	,,

* July 31st: The warehouse has been visited daily since July 17th and no dead rats have been found. August 3rd: The warehouse has been visited with the same result. There is abundant evidence that it is frequented by large numbers of rats; but there is no smell to be observed as there would be if rats had died in any number under the flooring. August 12th: Large numbers of rats in warehouse.

in showing the high virulence of the Danysz bacillus for rats, mice, and guinea-pigs if inoculated subcutaneously or intra-peritoneally, but it is different when the material is administered by ingestion. While it is a fact that virulent culture injected subcutaneously in a five-division dose into each of 24 mice caused death of all the animals in between 20 and 48 hours, when administered to other mice by ingestion in large doses it caused death of these animals in three, five, and eight days respectively. But the results were different with rats, for in these the feeding experiments with culture produced death in only 33 per cent. between eight and 14 days. There appeared, however, to be a chance of causing death of a larger percentage of rats by feeding these on rodents dead of the disease after subcutaneous injection. Rats were

[1] Deutsche Medicinische Wochenschrift, May 2nd, 1901, p. 275
[2] Ibid., May 30th, 1901, p. 351.

fed on mice which had died in 48 hours after being subcutaneously injected with virulent culture. None of these rats became ill or died. A number of rats were fed on guinea-pigs which had died after inoculation with virulent culture, and here the percentage of dead rats was certainly increased. Of six rats fed with the material from the guinea-pigs (subcutaneous fluid, peritoneal fluid, and spleen) four died from the disease in 11, 12, 11, and 18 days respectively; and of three rats fed with one whole guinea-pig two died from the disease in seven and 11 days respectively. So far the laboratory experiments.

2. *Experiments in the warehouse.*—The accompanying table gives the results of experiments of feeding on a large scale carried out in a dock warehouse in the Port of London, instituted by Dr. W. Collingridge, the late medical officer of health, and continued by the present medical officer of health. It ought to be stated in explanation of this table that the 60 tubes of Danysz rat virus used between April 26th and May 31st were culture tubes (on agar) which had been directly obtained from the Pasteur Institute of Paris, and that the guinea-pigs, mice, and rat used for the feeding experiments from June 14th to July 17th had all been inoculated subcutaneously in the laboratory with virulent culture of the Danysz bacillus and immediately after death from the typical disease were laid on the floors of the warehouse. We would also draw attention to the fact that one rat which had died after subcutaneous injection of the typical disease was offered to the rats in the warehouse but was not touched by them, whereas all the mice and the majority of the guinea-pigs were readily eaten by the rats of the warehouse.

The table shows that unlike the laboratory experiments those carried out in the warehouse were wholly negative, and therefore the expectation of the medical officers of health of a wholesale destruction of rats by Danysz rat bacillus as a preventive measure against plague cannot be considered from the results of the experiments to be of a promising nature.

It should be also stated that several rats that had not become ill after feeding with mice or with guinea-pigs or directly with culture were afterwards subjected to subcutaneous inoculation with small doses of virulent culture. They promptly became ill and died with the typical disease, thus showing that the susceptibility of the rat to the disease by subcutaneous injection is incomparably higher than by feeding.

It should be further stated that all laboratory experiments on rats kept in captivity must be conducted with care, since these animals, according to our experience (confirming that of Krausz), are liable to succumb spontaneously. In our experience 25 per cent. of the animals die in captivity within the first week or 10 days. On the other hand, those that remain alive and well after the first week or fortnight of captivity may be considered fit subjects for the experiment. It is possible that the great mortality of the laboratory rats observed by Kister and Köttgen may be due to this fact and not to their having been fed with the Danysz culture.

A CASE OF SO-CALLED "FŒTAL (OR CONGENITAL) RICKETS."[1]

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THERE can be no doubt that many of the cases reported in past times as "congenital rickets" were, as a matter of fact, not rickets at all, but achondroplasia or, in other words, chondrodystrophia fœtalis. In many of such cases at least the superficial likeness to rickets is great, the long bones are stunted and bent and the epiphyses enlarged. Stoeltzner has recently examined a fœtus with a condition which he calls "fœtal myxœdema"; it appears from his description that it resembled rickets, and though the myxœdema seems doubtful it certainly was not rickets. It seems certain, also, that there are various pathological processes which may take place during intra-uterine life which produce deformities and stunting of the bones quite apart from rickets.

In looking over the recent literature of the subject the cases which most resembled fœtal rickets that I can find are two reported by Osgood Mason[2] and Townsend.[3] Both of the patients in these instances died when a few days old, and unfortunately no post-mortem examinations were obtained. In each case there were imperfectly calcified bones, both the cranial bones and long bones; the ribs were beaded and bent; the bones of the limbs were curved, the curvature being curiously like the curves produced in acquired rickets; and the epiphyses were enlarged and several fractures were present. It is certain in these cases that there was a condition of "osteogenesis imperfecta" with a proliferation of the cartilage at the epiphyses. In one of the cases the mother had suffered privation during pregnancy, in the other she had been well fed and cared for.

The following case clearly resembles the two just related and presumably was of the same nature. The mother was 46 years of age and the infant in question was her fourteenth child. The other children were strong and healthy with the exception of two who had died in infancy from some wasting disease. No history could be obtained of syphilis in the mother or in the other children. The mother had suffered from some form of jaundice both before and after the birth of the infant and there had been a good deal of vomiting during the pregnancy. The infant was well nourished when he was born, and he took food well. When a fortnight old he was brought to the Manchester Children's Hospital and admitted under Mr. Joseph Collier as he had sustained various fractures, though there was no history of anything like violence. The fractures involved the right humerus and radius, and the left humerus, ulna, and femur were also fractured. It was noted at this time that there was marked cranio-tabes, the occipital and parietal bones especially being in a backward condition as regards calcification. The ribs also were abnormally soft, as they bent inwards during inspiration on each side of the sternum, forming the broad shallow grooves on each side so commonly seen in rickets. There was slight beading of the ribs but no enlargement of the epiphyses of the long bones or any marked curvature. The infant was well nourished and had apparently been born at term. He was fed on cow's milk and water, the fractures were put up in splints, the fractured femur being treated by vertical suspension. The fractures mended up well but when he was six weeks old the right femur fractured. This also repaired well, and the infant apparently throve and was sent out of hospital. It was noted that in consequence of the softness of the occipital bone it became very much flattened by the pressure of the head on the pillow when the infant was lying on his back. When seen at nine months of age the infant had cut two teeth and was bright and intelligent, without any signs of rickets or deformity of the bones. The occipital had a normal shape, the chest wall was well expanded, and there were no enlarged epiphyses.

What was the nature of these cases? They can hardly be classed as osteomalacia, as in this disease the patient goes from bad to worse, and it is doubtful if it occurs in infants, though in rare instances it seems to have occurred in children. Neither can they be said to be cases of fragilitas ossium—in this disease the bones are simply brittle and there is no tendency to bend. Syphilis produces an osteochondritis or epiphysitis, but not, as far as I am aware, a tendency to bend as well as to break. In the case I have just narrated I cannot help connecting the condition of the infant's bones with the fact that the mother was 46 years of age, had become more or less debilitated with child-bearing, and had suffered from illness during the greater part of the pregnancy. Yet notwithstanding this there was no sign in the infant of malnutrition except in the bones. In connexion with this it is interesting to note that Charrin and Gley[4] claim to have produced congenital rickets in rabbits by inoculating the parents with the toxins of diphtheria and blue pus. Certainly the cases here recorded suggest rickets, but I think a certain amount of caution is required in asserting they were true rickets in the absence of a post-mortem examination and a careful examination of the bones by modern methods. Cranio-tabes may be present in rickets, but it is present also in premature and in badly nourished infants. Slight beading of the ribs and abnormal softness of the ribs may be seen under similar circumstances. On

[1] A paper read before the Society for the Study of the Diseases of Children.

[2] A Case of Congenital Rickets, Archives of Pediatrics, September, 1894.

[3] Ibid., October, 1894.

[4] Comptes Rendus de la Société de Biologie, 10 s. iii., 220, 1896 (quoted by Ballantyne).

the other hand, enlarged epiphyses and fractures with curvatures are much more characteristic of rickets or of some intra-uterine disease.

The experiments and observations of Stoeltzner[3] still further impose caution in coming to a conclusion without having first had an opportunity of a histological examination of the bones. Thus Stoeltzner fed a puppy for eight weeks on a diet consisting of horse-flesh, bacon, and distilled water—a diet which was poor in lime salts. The animal gained in weight and also in length during the experiment, but on the tenth day it was noticed to have a waddling gait and there was swelling of the epiphyses of the bones of the foreleg, and later the ribs became beaded and bent. The bones also became tender (? scurvy). At the examination of the bones after death they were noted to be light in weight and very hyperæmic. Their naked-eye resemblance to rickets was very close. According to Stoeltzner, however, they were found on examination to be not true rickets, but simply spongy or in a condition of osteoporosis (*osteoporöse*). According to this author, an enlargement of the epiphyses, accompanied as it is with softening and swelling of the columnar zone of the cartilage, is not pathognomonic of rickets, as it is present in osteoporosis produced by a deficiency of lime salts in the food, and perhaps also in other conditions. In true rickets, though there is no deficiency of lime salts, the cartilage matrix does not undergo temporary calcification as it does normally; also the osteoid tissue built up by the osteoblasts remains uncalcified. In rickets much preparation is made for calcification, but the tissue formed for some reason or other is in a state unfit for the deposit of lime present in the blood. In osteoporosis comparatively little preparation is made for the deposition of the lime salts, but what osteoid tissue there is formed is completely and perfectly calcified. In rickets there is clearly a pathological state; in osteoporosis there is only a shortage of materials. Mr. F. C. Abbott's case, the post-mortem preparations of which by his courtesy I had the opportunity of seeing at the meeting of the British Medical Association this year, was one of undoubted rickets at the time of death at 14 months of age. There was a history of the deformities being present at birth, but the infant did not come under observation till some time later.

What is really wanted before the question of intra-uterine rickets can be finally settled is a careful pathological examination of an infant of the class in question made shortly after birth.

Manchester.

A CASE OF TYPHOID FEVER WITH RELAPSE; PERFORATION AND OPERATION

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NOTES BY DR. THORNTON.

THE following case may be of interest in view of the increasing number of cases where recovery has followed an operation for perforation of a typhoid ulcer. Although the patient here referred to died eventually, yet from a surgical point of view a success may fairly be claimed.

A woman, aged 27 years, was admitted into the Civil Hospital, Pretoria, on April 20th, 1901, this being about the twelfth day of an attack of typhoid fever. Rose-coloured spots, an enlarged, palpable spleen, and a more or less typical temperature range were to be observed. The fever pursued a normal course and ended about 14 days later by a rapid fall of the temperature. The temperature remained normal for another 15 days and then a definite relapse with a fresh crop of "spots" developed. Constipation, as is common in typhoid fever in this country, was present during both the first attack and the relapse.

[3] Das Fœtale Myxœdem und Die Pseudorachitische Osteoporöse infolge von Kalkarme Fütterung. Beiträge zur Pathologie des Knochenwachsthums.

The patient on admission was a feeble, emaciated, and anæmic woman, and during the course of the relapse the emaciation and general weakness became very pronounced. In addition, there were signs of bronchitis and hypostatic congestion of the bases of both lungs. Nevertheless, the patient was of the most optimistic disposition and always said she was "doing very well," so that good hopes were entertained of her recovery. Unfortunately, on the eighteenth day of the relapse perforation occurred. The symptoms pointing to this occurrence were pain of moderate severity, colicky in character and much aggravated by coughing, felt chiefly in the right lower quadrant of the abdomen; a rise of temperature of 3° and quickening of the pulse rate from 100 to 130; thoracic type of respiration; and total disappearance of the liver dulness even in the posterior axillary line, and this without any distension of the abdomen which remained hollow as it always had been. The patient was seen and examined within an hour of the occurrence of pain in the abdomen. A diagnosis of perforation was made and the aid of my surgical colleague was asked for.

With regard to the symptoms diagnostic of perforation I would venture to point out from the experience of several cases seen within a very few hours of the occurrence of this complication that it is frequently to be observed—(1) that the temperature first rises and does not fall with signs of collapse until some hours later; (2) that perforation may occur in cases where instead of tympanites the surface of the abdomen is quite hollow, and that the occurrence of distension in these cases only follows the onset of the consecutive peritonitis and paralytic distension of the gut; (3) that the absence of liver dulness in the mid-axillary line where there is no tympanites is an almost conclusive proof of the presence of free gas in the abdominal cavity, and that even if there be tympanites the liver dulness, although it may be absent in the mammary and anterior axillary line, is never absent in the mid and posterior axillary line without perforation having occurred; and (4) that in perforation there is usually a marked increase in the rate both of the pulse and the respiration. This and an obviously thoracic type of respiration should suggest perforation in a case of typhoid fever and lead to a careful examination of the abdomen. In the particular case here recorded a marked "crack pot" sound was observed on firm percussion in the eighth interspace in the mid-axillary line—a feature which I have never met with before or seen recorded.

My colleague, Mr. Godwin, deals with the surgical aspect of this case, but I may here draw further attention to the good effect which followed the use of calomel and saline purges freely given for the relief of paralytic distension of the gut which came on about from 30 to 36 hours after the operation. The results of the post-mortem examination showed that death was to be entirely attributed to the effects of the fever leading to marked fatty degeneration of the cardiac muscle and the occurrence of hypostatic pneumonia. From a surgical point of view the operation performed was successful, as the patient lived for eight days after it and the sutured gut was found air-tight and water-tight and there were no signs of peritonitis. Considering that the patient was exhausted by a long illness, being in the third week of a relapse, recovery was hardly to be expected; nevertheless the case presents many features of encouragement and fully warrants the belief that early diagnosis followed by suitable operative measures will lead to many recoveries from an otherwise fatal complication of this disease. Success will, above all, depend on early diagnosis, since operations, performed as they frequently are when the symptoms are not those of perforation only but of peritonitis following perforation, can only lead to failure and to condemnation of a thoroughly sound surgical procedure.

NOTES BY MR. GODWIN.

Taking into consideration the length of the patient's illness and her general weak condition I decided with Dr. Thornton that local anæsthesia would be preferable to giving ether or chloroform.

Operation.—The patient having been prepared in the usual manner the extremities were wrapped in cotton wool and two-thirds of a grain of eucaine were injected into the skin of the abdomen five minutes previously to her entering the theatre, and a hypodermic injection of 10 minims of solution of strychnia was administered. She was placed on a hot-water bed on the table and a nurse held a mask over her face so that nothing was visible to the

patient. The incision was made in the middle line between the umbilicus and pubes. No gas escaped on opening the peritoneum. The intestinal coil looked very healthy; there was no lymph or fæcal matter to be seen or smelt and no signs of peritonitis, either local or general, were present. On gently pulling out a few inches of small intestine a dark, highly infected patch was found which was the base of an ulcer formed only of peritoneum and apparently on the point of rupture. The intestines were gently passed on through the fingers and a few inches further up a perforation of the size of a pea was found, from which gas and a little yellowish, watery fluid could be expressed. Both ulcers were situated opposite the attachment of the mesentery; there were no signs of any lymph formation. The hole in the bowel was closed by inverting a portion about one inch long by means of Lembert sutures in the long axis of the bowel. Six sutures were introduced and the surface was sealed with collodion. The ulcer lower down, which was on the point of perforation, was then sutured in a similar manner for safety's sake, four sutures being introduced. No toilet of the peritoneum was made. The abdominal wound was closed with silkworm-gut sutures, all layers, including the peritoneum, being taken at once, and the dressing was applied. The operation was performed two hours after the onset of the abdominal symptoms. The patient stood it well and showed no signs of pain either during the incision through the abdominal wall or during the handling of the gut. She spoke several times during the operation and said that she felt no pain or discomfort. The pulse kept quite as good during the operation as it was previously to it. One hour after the operation the temperature was normal and the pulse was 100, thready, and thin, but regular. Five minims of solution of strychnia and a quarter of a grain of morphia were given hypodermically. On June 6th (the day after the operation) the temperature was normal and the pulse was from 120 to 130, regular, and fairly full. There was no distension of the abdomen and no flatus was passed. The patient remarked that she felt much better. A rectal injection of four ounces of brandy and milk was given every six hours and 10 minims of solution of strychnia were given hypodermically morning and evening. On the 7th the nurse reported that the patient's cough had been very troublesome during the early part of the morning, which caused her a good deal of abdominal pain. At 10 A.M. I found the abdomen distended, so I removed the dressings. The wound looked healthy; there was considerable tenderness on pressure all over the abdomen, the liver dulness was still absent, and no flatus had been passed. In consultation with my colleague (Dr. Thornton) we decided to give three grains of calomel with sulphate of magnesia every hour until the bowels were moved. After washing the rectum out with quantities of warm water a fair amount of semi-solid fæces and a good deal of flatus were got rid of. On the 8th the patient had had a fair night. The cough was less troublesome and the abdomen was scarcely at all distended. The long rectal tube was passed and the bowel was washed out with warm water; this brought away a large amount of solid fæces. The bowels acted once naturally in the afternoon and in the evening all distension of the abdomen had disappeared. The patient took her nourishment well by the mouth. From this date up to the time of her death, which took place on June 13th, eight days after the operation, the chief trouble to contend with was the condition of the heart and lungs. The pulse gradually got quicker, rising to from 150 to 160 daily in spite of all treatment, and the patient was much disturbed with cough and accumulation of secretions in the bronchi and inability to cough them up.

Necropsy.—A post-mortem examination was made 16 hours after death. On opening the abdomen there were no signs of peritonitis or even fluid in the peritoneal cavity. The omentum was slightly adherent to the incision in the abdominal wall, but there were no adhesions of the coils of the intestines either to each other or to the abdominal wall. The sutured portions of the gut were found to be quite air-tight and water-tight. The ulcer that had perforated was about three feet from the ileo-cæcal valve; several healed ulcers from the first attack and also the fresh ulcers of the relapse were found. On opening the chest a little clear fluid was found in both pleural cavities and also in the pericardial sac. Both lungs showed marked hypostatic pneumonia, nearly the whole of both lower lobes being consolidated. The heart muscle, even to the naked eye, was obviously much degenerated, the wall of the right ventricle being specially affected. The valves were normal.

Remarks.—The results of the post-mortem examination show that as regards the intestinal lesion the operation may be considered quite successful. It will be noticed that no general anæsthetic was given, but an injection of eucaine was made in the line of the incision. The patient felt no pain or discomfort and it is obvious from the critical condition in which all such patients must necessarily be that the giving of a general anæsthetic adds materially to the risk of these operations.

Pretoria.

THE COMPARATIVE VIRULENCE OF THE TUBERCLE BACILLUS FROM HUMAN AND BOVINE SOURCES.

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(*From the Laboratory of the State Live Stock Sanitary Board of Pennsylvania.*)

(*Concluded from page 356.*)

PART II.—TESTING THE PATHOGENIC POWER OF TUBERCULOUS MATERIAL OF HUMAN AND BOVINE ORIGIN.

IN addition to the study of a number of pure cultures obtained from man and cattle we have examined the pathogenic power of tuberculous material from the two sources also, making a series of inoculations which are as nearly parallel as possible. The results of these tests are shown in Table V. and Table VI. The plan was to inoculate a series of animals with tuberculous tissues rubbed into a smooth suspension, and at the same time and with the same material to inoculate a number of guinea-pigs which on their death would furnish material for another series of inoculations parallel with those made directly from the human and bovine tissues. It was believed that the material from guinea-pigs would more nearly represent pure cultures of the respective organisms than would be obtained from the tuberculous organs of man and cattle, and that the two sets of animals would lend themselves to an interesting comparison, besides fulfilling the primary object of comparing the virulence of human and bovine material. The plan was carried out for the bovine material, but failed for the human, as all the guinea-pigs died within 48 hours after inoculation. The second series of animals were inoculated with human material from another source and obtained at a later date. The results, while not entirely comparable, are nevertheless interesting and valuable.

Objections to the use of tuberculous material.—There are several disadvantages in using tuberculous material which were not overlooked in planning this work. 1. It is impossible to give accurate doses, for although our suspensions may be made of an equal opacity, and counts of equal amounts show approximately the same number of bacilli, there is no way of determining what proportion of these bacilli are capable of multiplication. 2. Material from man almost always contains other bacteria. Our knowledge of mixed infections is too scanty to enable us to estimate the part played by these other species in determining the result, whether they inhibit or aid the action of the tubercle bacillus. The same is true of bovine material, although to a less extent, the tuberculous foci being more apt to remain inclosed. On the other hand, infection under natural conditions is always through such mixed material, and this method of inoculation approaches in some degree the conditions we meet in practice.

Source of bovine tuberculous material.—The bovine tuberculous material was obtained from a cow, six years old, which had shown symptoms of tuberculosis for a long time and was finally condemned and killed. At the necropsy the animal showed a generalised involvement of the thoracic cavity with some invasion of the abdominal organs. In the lungs but little tissue approaching normal was found and the pleuræ were studded with small nodules. Many of the tuberculous areas in the lungs had undergone caseation,

TABLE V.—SHOWING RESULT OF INOCULATION OF ANIMALS WITH TUBERCULOUS MATERIAL FROM BOVINE AND HUMAN SOURCES.

Material.	Reference number.	Animals.	Date of inoculation.	Method of inoculation.	Dose in cubic centimetres.	Initial weight.	Weight at death.	Loss or gain in weight.	Died.	Killed.	Length of life. Days.	Averages. Days.
Bovine.	9838*a*	Horse.	July 14th.	Intra-pulmonary.	10	1205 pounds.	1010 pounds.	195 pounds loss.	Sept. 6th.	—	54	60
,,	9840*a*	,,	,, 30th.	,,	10	1075 ,,	1015 ,,	60 pounds loss.	—	Nov. 14th, 1899.	66	
,,	9701	Pig.	,, 14th.	,,	4	130 ,,	78 ,,	52 pounds loss.	August 23rd.	—	40	502
,,	9702	,,	,, 14th.	,,	4	131 ,,	103 ,,	28 pounds loss.	Oct. 19th.	—	97	
,,	9706*a*	,,	,, 30th.	,,	5	94 ,,	86 ,,	8 pounds loss.	Sept. 12th.	—	44	
,,	9706*a*	,,	,, 30th.	,,	5	85 ,,	72 ,,	13 pounds loss.	August 21st.	—	22	
,,	9697*a*	Sheep	,, 14th.	,,	5	66 ,,	49 ,,	17 pounds loss.	,, 27th.	—	44	38
,,	9696*a*	,,	,, 30th.	,,	5	71 ,,	49 ,,	22 pounds loss.	,, 31st.	—	32	
,,	9841*a*	Dog.	,, 15th.	,,	5	34½ ,,	24 ,,	10½ pounds loss.	Jan. 15th, 1899.	—	184	214½
,,	8010*a*	,,	,, 30th.	,,	5	28 ,,	—	—	—	March 20th, 1899.	245	
,,	8089*a*	Cat.	,, 18th.	,,	2·5	2508 grammes.	1695 grammes.	813 grammes gain.	August 18th.	—	31	25
,,	8001*a*	,,	,, 30th.	,,	5	1150 ,,	1043 ,,	107 grammes loss.	,, 19th.	—	20	
Human.	8008	Horse.	August 27th.	,,	10	1205 pounds.	1225 pounds.	20 pounds gain.	—	March 14th, 1899.	199	183½
,,	8088	,,	Sept. 27th.	,,	10	1200 ,,	1370 ,,	170 pounds gain.	—	March 14th, 1899.	168	
,,	9704	Pig.	August 27th.	,,	5	80 ,,	100 ,,	20 pounds gain.	Dec. 9th.	—	104	58½
,,	9842	,,	,, 27th	,,	5	91 ,,	91 ,,	—	Nov. 8th.	—	73	
,,	9844*b*	,,	Nov. 9th.	,,	5	70 ,,	71 ,,	1 pound gain.	Dec. 14th.	—	35	
,,	8096*c*	,,	Dec. 14th.	,,	5	—	193 ,,	—	—	March 21st, 1899.	97	
,,	9705*b*	,,	Nov. 9th	,,	5	87 pounds.	107 ,,	20 pounds gain.	Dec. 7th.	—	28	
,,	8094*d*	,,	Dec. 7th.	,,	5	—	—	—	,, 20th.	—	13	
,,	9698	Sheep.	August 27th.	,,	5	70 pounds.	74 pounds.	4 pounds gain.	—	March 17th, 1899.	202	202
,,	9699	,,	,, 27th.	,,	5	58 ,,	79 ,,	21 pounds gain.	—	March 17th, 1899.	202	
,,	12179	Dog.	Sept. 8th.	,,	5	55 ,,	28 ,,	27 pounds loss.	—	March 25th, 1899.	229	146
,,	12180	,,	August 27th.	,,	5	29 ,,	32 ,,	3 pounds gain.	Oct. 29th.	—	68	
,,	10023	Cat.	,, 27th.	,,	2·5	2190 grammes.	—	—	August 29th.	—	—	
,,	10060	,,	Sept. 8th.	,,	5	—	—	—	March 20th, 1899.	—	193	
Human sputum.	5984	Calf.	July 29th.	Intra-peritoneally.	10	108 pounds.	258 pounds.	150 pounds gain.	—	Jan. 14th, 1899.	169	133½
,,	8499	,,	,, 29th.	,,	10	131 ,,	265 ,,	134 pounds gain.	—	Jan. 14th, 1899.	169	
,,	8049	,,	May 16th.	,,	10	—	340 ,,	—	—	August 1st, 1898.	77	
,,	8050	,,	,, 16th.	,,	10	—	190 ,,	—	—	August 1st, 1898.	77	
,,	8074	,,	Oct. 18th.	Fed 11 times.	30 to 60	224 pounds.	385 ,,	161 pounds gain.	—	Feb. 18th, 1899.	123	
,,	8096	,,	,, 18th.	,,	30 ,, 60	230 ,,	350 ,,	120 pounds gain.	—	Feb. 18th, 1899.	123	
,,	9843*e*	,,	August 2nd.	Intra-peritoneally.	20	108 ,,	—	—	—	Jan. 10th, 1899.	161	
,,	9846*f*	,,	,, 2nd.	,,	20	132 ,,	—	—	—	Jan. 10th, 1899.	161	

(*a*) These animals were inoculated with the tissues of guinea-pigs which had died from general tuberculosis due to inoculation with material from a tuberculous cow. This material was the same as that used for the inoculation of the other animals. (*b*) Inoculated from tissues of pig 9842. (*c*) Inoculated from tissues of pig 9844. (*d*) Inoculated from tissues of pig 9705. (*e*) Inoculated from tissues of calf 8049. (*f*) Inoculated from tissues of calf 8050.

The mediastinal glands were enormously enlarged and were caseous. Scattered over the peritoneum were many nodules. The liver was considerably involved and the portal and mesenteric glands were enlarged and caseous. Other abdominal organs showed no microscopic lesions. Nodules were taken from the pericardium, mediastinal and mesenteric glands, the lung, and the pleura. After thorough trituration in a mortar, each part separately, they were mixed, sterile water was added, and the whole was strained through cheese cloth. With this material a series of animals was inoculated and at the same time a number of guinea-pigs. These all contracted tuberculosis, four dying on the fifteenth day. Portions of their organs were prepared in the same way and were used for the inoculation of a second series of animals. (See Table V.)

Sources of human tuberculous material.—This material was obtained from three bodies, the lungs only being used. Two of the three were cases of well-marked acute miliary tuberculosis, the other a case of chronic phthisis; all adults. The material was prepared for injection in the same way as described for the bovine, the suspension being made as nearly of the same thickness as possible. The first series of animals was inoculated with the tissues from one of the cases of acute miliary tuberculosis on August 27th. A number of guinea-pigs were also inoculated with the object of having their tissues for a second series of inoculations, as with the bovine material, but they all died from septicæmia within 48 hours, preventing the execution of this plan. With the exception of the pigs and the calves inoculated with sputum the other animals were inoculated from the two cases mentioned above. (See Table V.)

Method of inoculation.—In all the animals the injection was made into the lung, the field of puncture being shaven, washed with soap-and-water, next with alcohol and ether, and lastly with a 1 in 1000 solution of bichloride of mercury. The site of puncture was for the horses between the eighth and ninth ribs; for the pigs, sheep, and dogs between the sixth and seventh ribs; and for the cats between the fifth and sixth ribs.

The following are condensed post-mortem notes of the animals which were inoculated:—

Horses.—Two animals were inoculated with bovine material. One died after 54 days, with a loss of 195 pounds; the other was killed after 66 days, having lost 60 pounds. In both the disease was mainly in the thoracic cavity. In the one inoculated with material direct from the cow both lungs were involved throughout. In the other the tuberculous process was confined to the lung into which the injection was made and was marked only near the site of inoculation. Two animals were inoculated with human material. Both had to be killed. One was entirely normal, not even the point of inoculation being discernible. In the other the tuberculous process was confined to an area five cubic centimetres in diameter, with the point of inoculation as a centre.

Pigs.—Four animals were inoculated with bovine material. All died in an average period after infection of 50½ days. The two which received the bovine material direct lived 68½ days, as against 33 days for those inoculated from the guinea-pigs. In all of them the lungs were the chief seat of the disease, all showing an acute miliary tuberculosis of both organs. In the two inoculated directly from the cow the abdominal cavity was invaded to a limited extent, tubercle being seen only in the mesenteric glands. Six animals were inoculated with human material. Five died and one was killed. The average length of life of the two inoculated directly from man was 88½ days; for the three inoculated with tissues of other pigs which died the average was 22 days. In the first two the lungs were invaded throughout with miliary tubercles and one showed areas of pneumonic character. In neither was the abdominal cavity involved. Of the four pigs inoculated with material from the other pigs which had succumbed to inoculation with human tissues three presented a diffuse tuberculous pneumonia, rapidly fatal, one living only 13 days. The remaining animal was normal with the exception of the right lung and pleura. Both visceral and parietal pleuræ were largely covered with nodules from two millimetres to 12 millimetres in diameter, many of them caseous. The lung was dense throughout and contained many caseous areas, most marked near the surface.

Sheep.—Two animals were inoculated with bovine material. Both died, the one inoculated directly with bovine material in 44 days and the other in 32 days. Both were considerably emaciated and in both the disease was confined almost entirely to the thoracic cavity, the spleen being the only abdominal organ involved, and this only slightly so. In both the lungs showed hepatisation, more marked in the one inoculated with the tissue of the guinea-pig. Two animals were inoculated with human material. Both were killed 202 days after inoculation. One was entirely normal with the exception of an area in the right lung five centimetres in diameter at the point of inoculation, in the centre of which was a caseous abscess, the pus containing many tubercle bacilli. The second animal was normal throughout.

Dogs.—Two animals were inoculated with bovine material. The dog which received the bovine material direct became markedly ill, much emaciated, and died after 184 days. The pleural surfaces of both lungs were covered with minute nodules and were almost completely consolidated. In the right lung at the point of inoculation was a small abscess 2·5 centimetres in diameter. The dog inoculated with tissues from the guinea-pig showed little effect from it and was killed after 245 days. The only lesion found was an abscess cavity 12 millimetres in diameter at the point of inoculation in the right lung, scrapings from the wall of which contained many tubercle bacilli. Two animals were inoculated with human material. One was killed after 229 days. The only evidence of disease was the presence of numerous minute nodules on the pleural surfaces of both lungs and a few on the pericardium. The lungs were otherwise normal. The second dog began to cough after six weeks, lost flesh rapidly, and died on the sixty-third day. Both pleuræ contained six ounces of sanguinolent pus. The lungs were the seat of an extensive miliary tuberculosis and at the point of inoculation in the right lung was an abscess cavity seven centimetres long by 2·5 millimetres in diameter. The abdominal organs were not involved.

Cats.—Two animals were inoculated with bovine material. Both became rapidly ill, one dying in 20 days and the other in 31 days. In both the lungs were the seat of an acute miliary tuberculosis. In the one which received the bovine material direct the spleen contained a number of cheesy areas. In the other the mesenteric glands were enlarged and cheesy. The more rapid progress of the disease in the latter was probably due to its smaller size and the larger dose. Two animals were inoculated with human material. One cat died after two days and has not therefore been included in the averages. The second was killed after 193 days and was found to be normal throughout. Not even the point of inoculation could be determined.

Summarising these cases, 12 animals were inoculated with bovine material. 10 of these died, while two survived—the horse and the dog, which received the tissues of the guinea-pigs. 14 animals were inoculated with the human material, of which eight died and six were killed. For most of the animals the tuberculous material direct from the cow seemed to be the more virulent. The sheep and pigs were exceptions to this—the pigs notably so, those receiving the tissues of guinea-pigs dying in 33 days, as against 68½ days for the others. The averages of life after inoculation given in the table, as well as the greater mortality, show strikingly the increased potency of the bovine material over that from man. This difference is further brought out by the extent and character of the lesions produced by the one and the other, as shown in the post-mortem notes above and in Table VI.

Infection of calves with human tuberculous sputum.—The results of this experiment are included in Table V., the details, which are of considerable interest, being supplied here.

A calf (5984), aged five weeks, weight 108 pounds, was inoculated intra-peritoneally with 10 cubic centimetres of sputum from an advanced case of tuberculosis at the University Hospital on July 29th, 1898. The patient from whom the sputum was obtained was a young adult who had been ill for about one and a half years, and had been expectorating freely for one year. A cavity had been observed in the left lung about eight months before the sputum was obtained. Death occurred soon after. Beyond some slight elevation of temperature this calf showed no effect whatever from the inoculation. On Nov. 3rd it was tested with tuberculin but gave no reaction. When it was killed on Jan. 14th, 1899, it weighed 256 pounds, an increase of 150 pounds. It was in good condition and showed no tuberculous lesions in any part of the body. The site of inoculation could not be determined.

A calf (8499), aged five weeks, weight 131 pounds, was inoculated on July 29th, 1898, with 10 cubic centimetres of sputum of a patient at the University Hospital. This patient was an adult male, a miner by occupation. He

TABLE VI.—SHOWING COMPARATIVE EXTENT OF LESIONS PRODUCED BY INOCULATION OF HUMAN AND BOVINE MATERIAL.

—	Bovine material direct.	Bovine material passed through guinea-pigs.	Human material direct.	Human material passed through other animals.
Horses ...	Extensive disease of thoracic cavity.	Extensive involvement of lungs.	One horse limited involvement of one lung. The other was normal throughout.	—
Pigs ...	Extensive disease of thoracic cavity.	Extensive disease of thoracic cavity.	Extensive disease of thoracic cavity.	Rapidly fatal; very acute process confined mainly to lungs. Slower process in one, confined to lung and pleura of one side.
Sheep ...	Extensive disease of thoracic cavity.	Extensive disease of thoracic cavity.	Limited involvement of one lung and pleura of same side in one animal. The other normal throughout.	—
Dogs ...	Extensive disease of thoracic cavity.	Limited involvement of one lung.	Limited involvement of pleura and pericardium in one animal. In the other extensive disease of thoracic cavity.	—
Cats ...	Extensive disease of thoracic cavity and spleen.	Extensive disease of thoracic cavity and mesenteric glands.	Normal throughout.	—

had been under treatment for nine months. At this period the apices of both lungs were consolidated. He had a cough for two years, lost flesh, and had one severe hæmorrhage. He expectorated a large amount of muco-purulent sputum. This calf showed an elevation of temperature which continued almost without intermission for three months, reaching as high as 105·8° F. in August and September. On Nov. 3rd it was tested with tuberculin and gave a reaction. It was killed on Jan. 9th, 1899, weighing 265 pounds—an increase in weight of 134 pounds. It was in fair condition. There was a nodule in the peritoneum at the site of inoculation. In the omentum were numerous calcareous nodules of the size of a hazel nut and one softened nodule of the size of a hen's egg, which contained inspissated purulent material, and five smaller ones of the same character. The lungs, liver, and spleen were normal, but on the pleural surface of the diaphragm there was a deposit of fibrin which contained several well-defined nodules. On the abdominal surface of the diaphragm was a small amount of grape formation.

A calf (8049), aged about four weeks, was inoculated on May 16th, 1898, intra-peritoneally, with 10 cubic centimetres of sputum from an advanced case of pulmonary tuberculosis at the University Hospital. The sputum contained many bacilli. Beyond a slight cough, which was noticed in July, it showed no symptoms of discomfort and grew rapidly. It was tested with tuberculin on July 30th and gave good reaction. It was killed on August 1st; its weight was 340 pounds and its condition was good; there was a large amount of fat. On the surface of both lungs and on the pleural surface of the diaphragm was a fibrinous deposit. In the cervical lobe of the right lung a few small nodules were found on section. The mediastinal and bronchial glands were somewhat enlarged. The omentum contained a few nodules, and one, about one inch in diameter, which had undergone softening, the contents being rich in tubercle bacilli. The spleen showed a number of nodules. About one-half of the mesenteric glands were enlarged and showed cheesy degeneration. An emulsion from the centre of the softened nodule in the omentum and from portions of the spleen was made and 20 cubic centimetres injected intra-peritoneally into another calf four weeks old, weight 108 pounds, on August 2nd. Beyond a slight cough, noticed on Oct. 10th, the animal showed no ill-effects from inoculation. It was killed on Jan. 10th, 1899; its condition was good. The omentum was adherent to the peritoneum at the point of inoculation and contained some 10 nodules of about the size of a pea. In every other respect the animal was entirely normal.

A calf (8050), aged four weeks, was inoculated on May 16th, 1898, with sputum from an early case of pulmonary tuberculosis at the University Hospital. The sputum contained a large number of tubercle bacilli. Soon after inoculation the temperature of the calf rose and continued high, with some remissions, until it was killed. Its appearance was bad, the coat was dry and rough and the respiration was rapid. It was tested with tuberculin, but the temperature was too high for results. It was killed on August 1st, weighing 190 pounds. On the surface of both lungs there was a slight deposit of fibrin and on section a number of hemorrhagic areas were observed in both. The mediastinal and bronchial glands were enlarged and congested. The abdominal cavity contained about 12 ounces of bloody serum. The peritoneum was thickly studded over its entire surface with nodules from one millimetre to 12 millimetres in diameter, fibrous in character. In many places these nodules had massed together, forming tumours, some five centimetres in diameter, which were dense and fibrous. The spleen contained many nodules both on the surface and throughout its substance. The whole omentum was thickly studded with nodules from two millimetres to 12 millimetres in diameter: besides these there were three large masses, dense and fibrous in character, two of which were 15 centimetres long by seven centimetres wide, and 12 millimetres thick; and the third seven centimetres long, by six centimetres wide, by four centimetres thick. The abdominal surface of the diaphragm was thickly studded with nodules, fibrous in character. The mesentery was thickened and contained many nodules of small size. The appearance was that of a typical case of grape or pearl disease. The mesenteric and mediastinal glands were enlarged and somewhat caseous. 20 cubic centimetres of an emulsion made from these glands, which contained a large number of tubercle bacilli, were injected on August 2nd into the peritoneal cavity of another calf, four weeks old, weight 132 pounds. The animal showed no ill-effects whatever from inoculation and was killed on Jan. 10th, 1899. A careful post-mortem examination showed it to be normal in all respects.

Summarising these cases, four calves of nearly the same age received intra-peritoneally 10 cubic centimetres of human tuberculous sputum from different sources, but in all cases containing a large number of tubercle bacilli. One showed no ill effect from the injection except a slight rise of temperature, and when killed the necropsy was entirely negative. Of the other three, two had persistent high temperature following the injection, but only one showed marked illness otherwise. Post-mortem examination proved that all had become infected with tuberculosis, the lesions in two being quite extensive. From each of these two a second calf was inoculated intra-peritoneally with an emulsion made from well-developed nodules. In both cases the emulsion was rich in tubercle bacilli and a large dose—20 cubic centimetres—was injected. The result was absolutely negative in one animal and practically so in the other. Since both calves received a much larger number of tubercle bacilli in the emulsion than those injected with the sputum we are led to conclude that the result in the latter was due to a mixed infection which operated to the advantage of the tubercle bacillus. The attempt to infect calves with human sputum by the digestive tract failed wholly. Two young calves (Table V., Nos. 8074 and 8096) were given from 30 cubic centimetres to 60 cubic centimetres of sputum containing many tubercle bacilli on 11 days. Some disturbance of digestion resulted at the time, but when killed no trace of tuberculosis was detected.[1]

[1] This experiment was conducted by Dr. W. G. Shaw to whom all the credit is due.

Indications for further investigation.—In the further elucidation of this question cultures should be isolated from as many cases of primary intestinal tuberculosis as possible, and especially those cases in which there is reason to suspect infection by meat or milk. Having obtained the cultures it may well be asked whether or not we are in a position to determine positively the origin of the offending organisms. Are the differences which have been noted in culture, morphology, and virulence sufficiently marked and persistent to make differentiation possible? This I doubt. In my judgment much more work must be done before we are able to determine the origin of a given culture of the tubercle bacillus by examination of it in cultures. At present we know practically nothing of the influence of the human body on the tubercle bacillus, nor what changes may be induced in its morphology, cultural peculiarities, and virulence by residence in the human tissues, nor what length of time is necessary to induce such changes, if induced at all. In my studies I have, as shown in Table III., recovered the tubercle bacillus, both human and bovine, from horses, dogs, swine, goats, and in one instance had the rare, if not unique, opportunity of recovering the bovine organism from man after accidental inoculation. These recovered cultures have all been carefully compared with the originals, and while some differences have been observed and noted in the remarks following the table, with possibly one exception, they have not been of a marked or distinguishing character. In the case of the man the bacillus remained in his tissues from Jan. 1st to Feb. 27th—58 days. The recovered culture was practically identical with the original. This is, however, a shorter time by a great deal than elapses between intestinal infection in children through food and their death, and does not enable us to draw conclusions as to these cases. Like the culture recovered from animals it indicates that the tubercle bacillus is, as a rule, quite tenacious of its characteristics. We have noted constantly that the bacilli found in scrapings from the various organs of the animals inoculated with bovine cultures have been long and beaded, though the culture used was of the short and unbeaded type. The recovered cultures, however, on blood serum have always resembled the original. In a series of examinations of material coughed up by cows I failed, in every case, to find bacilli of what has been described as the bovine type. In fact, the longest tubercle bacilli I have ever observed, except in old cultures, were seen in some specimens of this material. The virulence of this material was considerably greater than human sputum ordinarily is, though the comparison was not made with accuracy.

Retention of characteristics in culture.—On blood serum with 5 per cent. of glycerine the tubercle bacillus from bovine sources will, as a rule, retain its morphological and cultural characteristics for a long time. Culture H has now been grown for two years (July 6th, 1901) and is of the sixteenth generation. Beyond an increased vegetation no marked change can be detected in it. With a single exception (Culture F) the same may be said of all the cultures isolated. This culture was isolated with some difficulty, and so scant was the growth for six generations that I was several times on the point of abandoning it. Only in the sixth generation was growth enough obtained for experimental inoculation. Considerably more growth took place in the seventh, and the eighth grew luxuriantly, since which all sub-cultures have been abundant. From the eighth generation on serum cultures were made on 5 per cent. glycerine agar, and an abundant growth obtained on this medium in the first transfer. Coincident with this increase of vegetative power came a marked change in the morphology. From being short, thick, and staining evenly, it is now long, more slender than in the early growth, and shows marked beading. In other words, from being a typical "bovine" culture, it has during the past ten months so changed that it can now pass as a typical "human" culture. It will be observed, by reference to Table IV., that its pathogenic power for guinea-pigs and rabbits was not as great as is usually found in bovine cultures.

Culture in collodion sacs.—The method of culture in the body of living animals, which has been productive of such brilliant results in the hands of the French, offers much assistance in the solution of the problem before us. It has enabled Nocard [2] to demonstrate the possibility of so modifying the mammalian tubercle bacillus that it becomes like the avian organism in culture and pathogenicity. We are now attempting to modify two feebly virulent human cultures by residence in the peritoneal cavity of cattle. Culture M was kept for seven months in the abdominal cavity of a heifer inclosed in collodion sacs, two sacs being used. On removing the sacs but little multiplication of the bacilli was noted. Cultures were recovered directly from the sacs. In the first transfer the cultures grew more rapidly and abundantly than the original culture, but the morphology of the individual bacilli cannot be said to have changed to a noticeable degree. The virulence was not increased. Rabbits were not killed by subcutaneous inoculation. Guinea-pigs died after an average of 42½ days. A calf inoculated intra-peritoneally showed no ill-effects and gave no reaction to tuberculin after seven weeks. Culture Nasua narica (coati) of Dr. Theobald Smith, inclosed in collodion sacs, was kept in the peritoneal cavity of a yearling heifer for 11 months. On removal there was considerable increase in the growth, especially in one sac. Cultures were recovered from the sacs and showed some marked changes, especially in the manner of growth. On both blood serum and glycerine agar the growth was most rapid, at least twice as rapid as usual for this culture. On serum it covered the surface in from seven to 10 days, as a thick, white, moist layer, almost cottony near the water at the bottom. On glycerine agar the growth was more dry and wrinkled, but very rapid. The bacilli stain more evenly and are, on the whole, shorter, though long forms are seen. Guinea-pigs and rabbits inoculated subcutaneously are still living after four months. A calf which received four cubic centimetres of a milky suspension in the jugular vein reacted to tuberculin after 10 weeks. The experiment is being continued, the culture recovered from the capsule having been placed again in the peritoneal cavity of another calf. No conclusions can be drawn as yet, though the indications are that both cultures have become less strictly parasitic rather than more so by the procedure.

AS TO THE INTERPRETATION OF THE RESULTS OF THE EXPERIMENTS.

Accepting it as proven that the bovine tubercle bacillus has, as a rule, considerably greater pathogenic power than the human bacillus for a large majority of experimental animals, how should we interpret this in regard to man? Is it fair to conclude that this increase of virulence will hold good for man also? Until the contrary is proven, or until good reason for believing the contrary is shown, it is, in my judgment, right that this conclusion be held, at least as a working hypothesis. I am aware of the objections to this view that will be raised by some and acknowledge freely that it cannot be accepted as conclusive. Virulence is no doubt a factor which is relative to the subject, and exaltation of virulence for one species does not necessarily prove an increased virulence for other species. Indeed, the reverse is true in some instances.[3] However, it cannot be denied as a general rule that when the virulence of a pathogenic organism is increased for one animal it is increased for all that are naturally susceptible to its action.

The tubercle bacillus is unique in the extent of its pathogenic activity, both by direct experimental inoculation as well as by infection under what may be considered more or less natural conditions. The list of animals in which tuberculosis has been observed in parks and zoological gardens is appalling, the discoveries of Dubard [4] and others showing that not even the cold-blooded animals are exempt from this universal scourge. While it may be said of the tubercle bacillus that in cultures in the laboratory it is unusually tenacious of its characteristics, it is certain that in nature it has a wide range of adaptability as a pathogenic agent. Hence for the tubercle bacillus perhaps more than for any other known microbe we are justified in believing that an exaltation of virulence for practically all experimental animals will hold good in the case of man also.

The question can be determined definitely only by direct inoculation of man. To do this experimentally is, of course, impossible, consequently we are forced to rely for evidence of this nature on those accidental cases which occur from time to time. It has been my fortune to have three such cases come under my observation, in each of which the infecting organism was known positively to be of bovine origin.[5]

[2] Annales de l'Institut Pasteur, vol. xii., No. 9, September, 1898.

[3] The streptococcus is said to become increased in virulence for mice by successive passages through these animals, but less virulent for rabbits.

[4] La Revue de la Tuberculose, April, 1898.

[5] Philadelphia Medical Journal, July 21st, 1900.

Similar cases have been reported by Tscherning[6] and Pfeiffer,[7] the latter ending in general infection and death. To these may be added two cases observed by Dr. M. B. Hartzell[8] of the University of Pennsylvania, though in both absolute proof of the bovine origin of the offending organism is lacking. Both occurred in healthy men employed by one of our large American railways to clean and repair cars used in the transportation of cattle. In both a well-developed tuberculosis of the skin followed slight wounds of the back of the hand inflicted by broken timbers. In one case the local disease was soon cured and no further trouble resulted. The other, however, ended fatally after about a year, through the infection becoming generalised, with involvement of the lungs. This patient was a robust man, 44 years old, weighing 175 pounds, with a good family and personal history. Dr. Hartzell felt able to exclude with reasonable certainty any other source of infection.

Cases such as these permit us to deny with authority the claim which has been made by certain persons that by long residence in animals of the bovine species the tubercle bacillus becomes so changed as to render it incapable of successful residence in the tissues of man. In all of these instances the bovine bacillus grew and multiplied under conditions known to be most unfavourable to it with the production of characteristic lesions and in two of the seven cases gained access to the internal organs causing death, a result which is unusual when the local lesion is due to infection from human sources. While the number of cases is too small to enable us to draw sweeping conclusions the indications are that by this mode of inoculation the pathogenic power of the bovine bacillus is at least as great as that possessed by its human congener.

Infection through food.—It will not be necessary here to review at length the reported instances of infection through the digestive tract following the use of food products from tuberculous cattle. Most of these of necessity lack precision and are not absolutely demonstrative, though some of them have, as Nocard has said, "almost the value of an experiment." The well-known observations of Stang,[9] Demme,[10] Gosse,[11] and Ollivier[12] leave little doubt of the power of the bovine tubercle bacillus to infect man through the digestive tract.

The evidence derived from the statistics of tuberculosis on this point is purely circumstantial yet of such strength as to be most convincing. The compilations of Dr. Tatham bring out most strikingly the fact that in early life some potent factor is at work in causing tuberculosis. In the Harben Lectures for 1898 Sir Richard Thorne speaks of this as follows: "So, also, if you will compare the rates in Tables A, B, and C (pages 5, 6, and 7), and contrast the reduction of 27·9 per cent. which has taken place, under five years of age, during the last 45 years in all forms of tuberculous disease and that of 66 per cent. in phthisis with the corresponding one from tabes mesenterica, which only reached 3·0 per cent., you will see that in considering the latter cause of death we are dealing with a totally different state of affairs. ..... The matter, too, assumes a still more serious aspect if we limit ourselves to the first year of life when milk is most largely used as food, for then we find that the reductions in the rate of death from the various forms of tuberculosis, which reduction has been going on at 'all ages' for about half a century, not only disappears but is actually transformed into a large increase, reaching no less than 27·7 per cent. This in itself is grave enough, but its significance is still further emphasised when we remember what are the circumstances under which this increase in the rate of death from tabes mesenterica has gone on synchronously with a decrease in that from other forms of tuberculosis." Evidence of a similar nature is given by Dr. G. F. Still[13] of the Hospital for Sick Children, Great Ormond-street, in his analysis of 769 consecutive necropsies of children under 12 years of age, 269 of which showed tuberculous lesions. Of these, 117, or 43·5 per cent., were in children under two years old, while in the first three years of life 56·6 per cent., or more than a half of the total number, occurred. From his study of the lesions in these cases Dr. Still believes that in 153, or 56·8 per cent., the respiratory tract was the channel of infection, while in 63, or 23·4 per cent., the alimentary canal was responsible, the remaining 53 cases being uncertain or otherwise accounted for. Accepting these figures as given they indicate strongly that milk, the most largely used food, has a considerable part in the spread of tuberculosis, and justify the conclusion quoted from a report made to the Council of the British Medical Association, that "the mortality from tuberculosis in early childhood is not decreasing as it is at other ages in the United Kingdom, and the opinion that this great prevalence of the disease in childhood is due to infection through the alimentary canal by milk from tuberculous cows appears to be well founded." From Germany come further confirmatory facts. Widerhofer gives an analysis of 418 cases of tuberculosis in children, showing among them 101 with involvement of the intestine. Of these, 43, or 42·5 per cent., were between the ages of two and five years, the period of life when cow's milk forms a large part of the food for children.

CONCLUSIONS.

In view of the foregoing experiments and of the evidence quoted it seems justifiable to conclude:—

1. That the tubercle bacillus from bovine sources has in culture fairly constant and persistent peculiarities of growth and morphology by which it may tentatively be differentiated from that ordinarily found in man.

2. That cultures from the two sources differ markedly in pathogenic power, affording further means of differentiation, the bovine bacillus being very much more active than the human for all species of experimental animals tested, with the possible exception of swine which are highly susceptible to both.

3. That tuberculous material from cattle and from man corresponds closely in comparative pathogenic power to pure cultures of the tubercle bacillus from the two sources, from all animals tested.

4. That it is a fair assumption from the evidence at hand, and in the absence of evidence to the contrary, that the bovine tubercle bacillus has a high degree of pathogenic power for man also, which is especially manifest in the early years of life.

[6] Congrès pour l'Etude de la Tuberculose, first session, 1888.
[7] Zeitschrift für Hygiene, Band iii., 1896.
[8] Journal of the American Medical Association, April 16th, 1898.
[9] Nocard: Les Tuberculoses Animales.
[10] Ibid.
[11] Ibid.
[12] La Semaine Médicale, Feb. 25th, 1892. Paris Academy of Medicine.
[13] Brit. Med. Jour., August 19th, 1899, and Journal of Comparative Pathology and Therapeutics, vol. xii., Part 4.

ATYPICAL EMPYEMA IN GENERAL PRACTICE, WITH ILLUSTRATIVE CASES AND CRITICAL NOTES.[1]

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THE very frequency of empyema invests the condition with a special interest to the general practitioner—an interest which is emphasised by its perversity in arising when it is least expected and its vagaries in running courses and achieving results which, to say the least, are disrespectful alike to teachers and text-books. The associated operation which is generally performed by the practitioner himself is not always followed by the expected result. Cases sometimes rapidly recover where we had little hope of such a result or, alas, they sometimes disastrously end where we were confident of a happy result. The following cases illustrate the varying behaviour of pleural effusions and the difficulties incident to their diagnosis and management.

CASE 1.—A boy, aged seven years, with satisfactory family history and a previous record of good health, came under my care in March, 1900. His malady for the first five days presented the usual signs and ran the ordinary course of a sharp broncho-pneumonia. Resolution on the right side took place, but fluid appeared in the left pleural sac. On the eighth day an exploratory puncture disclosed some pus. On the tenth day the usual operation resulted in the withdrawal of half a pint of pus, the odour of which was more suggestive of ischio-rectal than pleural origin. An interval of three weeks found the discharge still copious and fœtid, the temperature unpleasantly hectic in behaviour, the cough paroxysmal, and the expectoration

[1] A paper read before the Bradford Medico-Chirurgical Society on June 18th, 1901.

fœtid and purulent. The lad's general state was an incomprehensible contradiction to the local condition. He ate well and slept well, and he had put on flesh. Washing out the pleural sac has been an abhorrence to me since the time when, as a student, I saw a patient bid a hurried farewell to things mundane while having an empyema cavity swilled out with boric lotion. Efficient drainage and the injection of glycerines charged with antiseptics but followed by no beneficial results tempted me to risk washing out. The procedure resulted in paroxysmal cough and the escape of the lotion by the mouth. I desisted and, fortified by a consultant's approval, I returned to my former treatment. The end of another fortnight found things unaltered and I had to thank a careless dressing for the ultimate result. One evening, on removal of my morning dressing, the nurse found the tube out and was unable to introduce it. Next morning I found the patient to be no worse and I did not re-introduce the tube. The patient made a rapid and perfect recovery; the cough and expectoration gradually disappeared and in a month he was running out and has enjoyed robust health since.

CASE 2.—A man, aged 29 years, came under my care in 1899. He had been taken ill at his work seven weeks previously, his symptom being pain in his abdomen. The village barber (an anachronism) attended to him. The appearance of a lump in three weeks followed by rupture and discharge of pus made the barber a proud man and the demand for his drawing salve straightway much increased. The patient, however, kept getting worse and his relatives thought "that they had better have a common (*sic*) doctor" in case he died. Most practitioners have experience of this procedure. I found him a seven-stone wreck of a 12-stone man. His appearance and the thin discharge from a sinus in the lumbar region outside the erector spinæ made him the presentment of a man in a far-gone case of sacro-iliac disease. Diagnosis at sight and leading questions framed accordingly are bad habits which are easily acquired. I concluded that I had to deal with a case of nephritic or perinephritic trouble. His urine was albuminous and contained pus, and he had slight cough and dulness over the lower part of the right lung. I slit up several radiating sinuses and introduced a tube to the bottom of what I thought was the main channel which ran in towards the kidney. The lapse of a few days brought no improvement and I discovered another sinus branching off from the other. This ascended up under the ribs to a point just below the inferior angle of the scapula. The introduction of a fine drainage-tube, replaced from time to time by a larger, was followed by encouraging results. A fortnight found the sanious discharge replaced by a creamy pus. His skin had lost its ominous earthy hue, the night sweats had gone, and his appetite had returned. His subsequent health has been all that could be desired.

CASE 3.—The patient was a boy, aged 10 years, whom I was called upon to attend in June, 1900. The lad presented the classical signs of peritonitis. The account of the onset, the previous history, and the progress of the case led me to believe that I had to deal with an acute tuberculous peritonitis grafted on to one of a chronic character. The state of the lungs and the cerebral symptoms pointed strongly to a concomitant general tuberculosis. Opening the abdomen could not in the face of things be entertained and my hopeless prognosis was endorsed by a medical brother who was called in in consultation. After a few days the patient's umbilicus protruded and as the swelling evidently contained pus I incised and inserted a tube. The patient was relieved and picked up for a few days, but then proceeded to develop numerous subcutaneous abscesses over the head and the trunk. There was marked dulness over the lower left lung and a hypodermic puncture revealed the existence of an empyema. His relatives had not been at all pleased with the recurring trouble incident to opening the subcutaneous abscesses, and even if I had felt justified in recommending a formal operation it would assuredly have been met with the familiar "Don't put him to any more pain, doctor." One morning while he was under an opiate administered the previous night I plunged a knife between the sixth and seventh ribs into the sac and inserted a tube. A tardy convalescence resulted in his being sent to school out of the way as a nuisance. He immediately contracted diphtheria and was removed to the infectious diseases hospital, where between renal troubles and paralyses he ought to have died, but did not.

CASE 4.—The history of this case is brief and tragic. I was called in recently to see a boy, 15 years of age, whom I found suffering from an effusion filling the left pleural sac up to the sixth rib. There was a history of three days' illness and the lad's general condition was very fair. I purposed seeing him in the evening and making an exploratory puncture, but had scarcely got home when an urgent message recalled me to his bedside. I found him livid and collapsed and with a barely perceptible pulse, and he died five minutes after my arrival. A post-mortem puncture established the purulent nature of the effusion.

In recording these cases I have mentioned the outstanding features only and have no doubt omitted many particulars which ought to have been furnished. We learn by our own mistakes and those of others, as witness my erroneous primary diagnoses. We often attain an undeserved *kudos*, as was shown by the results of the first three cases. We are often visited with unmerited censure, as would assuredly have been my lot had I had with me an exploratory syringe when I first visited the fourth case. *Post hoc, propter hoc*, constitutes the average layman's logical horizon in medical matters.

In Case 1 the oscillating temperature after the operation is noteworthy; after establishing an external drain in an empyema a normal temperature is usually run. There were no physical signs indicating communication between a bronchus and the sac previously to the introduction of fluid. The communication was, I think, not present *ab initio*. The effusion was tuberculous and doubtless resulted from the rupture of a caseous gland in the root of the lung—a very frequent cause of effusion. Subsequent progressive changes in the vicinity of the original lesion effected the communication. I cannot pretend to explain why the withdrawal of a tube three-quarters of an inch long barely intruding within the chest wall should effect such a rapid and complete recovery. Case 2 illustrates the dictum that an empyema, like a vertebral abscess, may open anywhere. The patient's emphatic assurance that his pain was confined to the abdomen directs attention to the importance of determining whether pain is indicative of immediate local trouble or is a peripheral manifestion of a more central lesion. How often in chest troubles does the patient complain of his abdomen, and this is especially observable in pleural affections. The root communications and abdominal distribution of the terminations of the lower intercostal nerves explain this phenomenon. An analysis of Case 3 suggests that the empyema may have been secondary to a subphrenic abscess. This view may be dismissed as the pus was sweet throughout, there was no admixture of gas and pus at either the abdominal fistula or the thoracic fistula, the mischief was on the left side, and the age and previous history negatived the presence of any of the usual hepatic, gastric, or enteric antecedents of subphrenic abscess.

Case 4 is a forcible reminder of the fact that patients suffering from pleuritic effusions sometimes die suddenly, without warning, without apparent cause, and when such a catastrophe is least expected. "I think you might have told us, doctor," is not a pleasant salutation from the relatives of the deceased. The advice of an old teacher, "When there is a possibility of sudden disaster in a case let your prognosis be Delphian in its ambiguity," has been a blessing to me in those cases. The approval of relatives and the comments of neighbours, whether they are justified or otherwise, affect the general practitioner's success in a way which he cannot ignore and a few words of ante-mortem warning far outweigh hours of post-mortem explanation. Thrombosis in the right heart, propagated pulmonary thrombosis, and pulmonary embolism account for a few of these deaths. Various theories have been advanced to explain that majority where no satisfactory cause is revealed on post-mortem examination. I think that consideration of intra-pleural physics and a recognition of the vagal reflexes clear the matter up. The fatal syncope is invariably preceded by disturbance of the patient, auto-disturbance, as in a fit of coughing, or from external causes such as in my own patient, where I believe that the ordinary necessary movements incident to chest examination were the cause. In cases where the chest has been examined immediately before and the then area of dulness contrasted with the condition during the syncope the sudden and vast increase in the area of dulness is very manifest.

The study of intra-pleural physics is fraught with weariness and vexation of spirit. Authorities agree in nothing except in contradicting each other, but from the mass of conflicting statements one may gather the following facts. The

pressure of intra-pleural effusions may vary from a negative of five to a positive of 19 of mercury. The amount of fluid does not always determine the tension, which may be high in the limited effusion or low in a copious effusion. A thick layer of fluid associated with a very high tension may be present, although there exists no obstacle to a uniform diffusion in the sac. Neither gravity nor posture will account for this. A sudden and entire collapse of one lung would seem only to represent an abolition of half the respiratory capacity; it is, however, a much graver misfortune. Displacement of the mediastinum and the factor of "unsatisfied elasticity" of the sound lung which is thus introduced reduce its functional efficiency to one-fourth or one-fifth of the normal dual respiratory capacity.

These premisses warrant, I think, the conclusion that many of these sudden deaths admit of explanation as follows. That untoward disturbance of a patient results in a generalisation through the pleural sac of a previously localised pressure. As a result of the attendant pulmonary collapse a previously impaired respiratory capacity of $\frac{1}{4}$ or $\frac{1}{5}$ is suddenly reduced to $\frac{1}{8}$ in an already debilitated subject. Further, an appreciation of the great sensitiveness of the cardio-inhibitory centre in the medulla and the countless afferent paths from the thorax available for transmission of unauthorised stimuli establishes the absurdity of advancing such anatomical and physiological absurdities as "twisting of the vessels," and so on.

The significance of sudden alterations in pleural effusions and the parts played by adventitious cardio-inhibitory stimuli are shown by the deaths and collapses which are incident and subsequent to opening the sac in operating on empyema, when washing out the pleural cavity, when aspirating, or when simply making a diagnostic puncture.

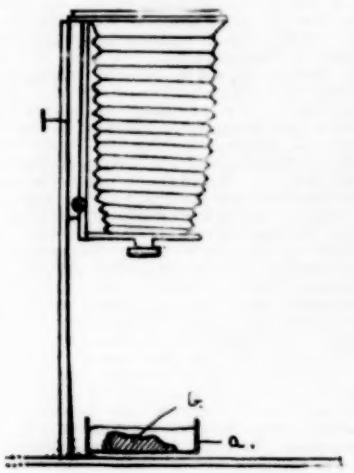
Keighley.

AN IMPROVED METHOD OF PHOTOGRAPHING PATHOLOGICAL SPECIMENS.

BY J. EFFIE PROWSE, M.B., CH.B. GLASG.

IT is generally admitted that to obtain a permanent and accurate record of pathological conditions photography is the most reliable method available to most workers. The results, however, point to much that is unsatisfactory. Specimens, whether removed at operations or post mortem, when viewed on the ground glass appear singularly deformed owing to the

FIG. 1.



Showing arrangement of camera.

patches of light which are always in evidence where there is any moisture. Much difficulty is experienced in getting the object fixed in such a position as it occupied during life. Pinning down to boards, arranging backgrounds, &c., take a considerable time and it is disconcerting to remember that while this is being done, the tissue is probably being irreparably damaged by drying. The finished picture is flat, harsh, and lacking in depth and contour, cystic structures have collapsed, delicate filaments are matted together,

FIG. 2.

From a photograph taken in water.

cavities are lost, and the original specimen is almost unrecognisable.

A very simple method by which all these disadvantages are removed is to photograph all specimens *under water*, but not through glass. The camera is placed in the vertical position, screwed on to an upright, which is attached at

FIG. 3.

From a photograph taken in air.

right angles to a base board (see Fig. 1). A large glass jar (*a*), with a plain bottom and straight sides, is placed immediately below. In this is placed the specimen (*b*) and water is then added until the former is well covered. Care should be taken that the water is perfectly clean and free from air-bells. A piece of white blotting-paper or a dark piece of wood slipped under the jar forms an excellent background.

No difficulty will be found in placing the object in a natural position, this is assumed quite mechanically in most

cases. Cavities expand to their right dimensions, cysts float out in a way quite impossible to imitate when dry, the most delicate lines and hairs are faithfully represented, and the picture when complete shows the specimen as it was originally seen *in situ* with soft delicate outline and marked contrasts.

The illustrations speak for themselves. The one taken in air (Fig. 3) was the best result obtained after several attempts; the one in water (Fig. 2) was taken at the first trial.

Liverpool.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ROYAL HANTS COUNTY HOSPITAL, WINCHESTER.

TWO CASES OF GASTRIC ULCER FATAL THROUGH HÆMORRHAGE.

(Under the care of Dr. H. E. WINGFIELD and Mr. T. C. LANGDON.)

THE mortality from gastric ulcer is difficult to estimate as in all probability many cases are never diagnosed. Grünfeldt in 450 post-mortem examinations of patients over 60 years of age found the scars of healed ulcers of the stomach in 92; these figures show a frequency of over 20 per cent. in these cases over 60 years of age.[1] It is obvious, therefore, that gastric ulcer often escapes diagnosis. If we consider only those cases in which a definite diagnosis has been made a high mortality appears which has been given by different authors as between 10 and even 50 per cent. The two cases which are recorded below are remarkable in that the presence of the gastric ulcer was overshadowed by other morbid conditions present. In the former of the two cases it is not improbable that the gastric hæmorrhage was venous in origin. The latter case demonstrates clearly the importance of necropsies in all obscure cases of death after injury and shows how valueless from a scientific point of view is the verdict "Accidental death." For the notes of the cases we are indebted to Dr. T. W. Letchworth, house physician.

CASE 1.—A man, aged 45 years, was admitted into the Royal Hants County Hospital on May 5th, 1901, complaining of shortness of breath and swelling of the feet. On a previous occasion he had been treated for aortic incompetence for several months, but he dated his present symptoms from Christmas, 1900. He had been obliged to leave off work a month before admission. He had been a heavy drinker, but had never complained of more gastric pain or discomfort than this and the condition of his circulation would account for. On admission he was deeply cyanosed and his face and lips presented a blue and bloated appearance. There was œdema of the feet and legs. The area of cardiac dulness was increased on either side of the sternum, and the apex beat was displaced outwards and downwards. There was a double murmur over the aortic area and there was a systolic murmur at the apex conducted into the axilla. The pulse was rapid, irregular, and collapsing, and flushing of the forehead with each systole was very marked. The liver dulness was slightly increased. A diagnosis of aortic regurgitation with secondary mitral regurgitation was made. The urine was scanty, of high specific gravity, and loaded with albumin. He was bled with temporary relief on several occasions. He started to develop ascites about the beginning of June and during the last few days of his life there was evidence of fluid at both bases, rapidly increasing in amount. On the morning of June 18th he suddenly vomited about two pints of blood; he vomited blood again twice. In all about six pints were brought up, and he died within four hours, evidently from hæmorrhage.

Necropsy.—At the post-mortem examination the body was found to be œdematous and very pale. A large amount of fluid was present in the abdomen and both pleuræ. The heart weighed 22 ounces. Both ventricles were dilated and hypertrophied. The aortic valves were contracted and were covered with calcareous masses, being practically functionless as valves. The aorta was very atheromatous. The mitral valve was thickened and incompetent. The stomach was full of blood. On the posterior wall, near the lesser curvature and the pylorus, there was an ulcer of the size of a shilling, which had penetrated the whole thickness of the stomach wall, which was here adherent to the pancreas behind. Its edges were undermined and enormously thickened. There were numerous vessels exposed on the floor of the ulcer, but the vessel whence the hæmorrhage had proceeded was not apparent. The liver was cirrhotic and the kidneys were cardiac.

CASE 2.—A man, aged 49 years, was taken to the hospital on July 1st, having been upset with a cart which he was driving and which fell down an embankment. The horse was supposed to have rolled over him. He had sustained a Pott's fracture of both ankles and had broken one of his ribs, about the tenth on the left side. He also complained of pain in his back. 36 hours after admission he suddenly vomited about one pint of blood. On inquiry it was ascertained that he had frequently suffered from pain in the back and epigastrium, especially after meals, had vomited often, and had brought up altered blood. The day before the accident he had been laid up with pain and vomiting. Copious hæmatemesis continued for about three days and then stopped. He died from the effects of hæmorrhage on July 8th.

An inquest was held. The coroner refused to order a post-mortem examination although he had been informed that it would be essential in order to arrive at a satisfactory conclusion as to the cause of death. The house surgeon, in giving evidence, stated that death was due to loss of blood but was unable to tell the source. The coroner, having told the jury that in such a case he did not consider a post-mortem examination necessary, advised them to return a verdict of "Accidental death," which was done.

Necropsy.—With the permission of the relatives a post-mortem examination was then performed. No injuries further than those recognised during life were found. The fractured rib had not penetrated the peritoneum and there was no evidence of injury to any viscus. There were numerous adhesions about the stomach and great omentum; otherwise all the organs were normal save the stomach. Besides the scars of two small ulcers there was on the anterior surface, near the lesser curvature and pylorus, a recent and very superficial ulcer of the size of a sixpenny bit. In the centre of this could be seen standing out above the level of the floor of the ulcer a small artery which had been eroded and whence undoubtedly the hæmorrhage had proceeded.

Remarks by Dr. LETCHWORTH.—The peculiarity of the above cases is that in the first the patient seemed, when the fatal hæmorrhage occurred, to be actually dying from heart failure due to aortic incompetence, and in the second that the hæmorrhage commenced 36 hours after a serious accident involving a crush of the chest and a fractured rib, but in which it seemed impossible to attribute the hæmorrhage in any way to the injury.

[1] THE LANCET, Jan. 27th, 1894, p. 203.

STATION FAMILY HOSPITAL, CLIFFDEN, MURREE, INDIA.

A CASE OF ACUTE VOLVULUS OF THE SIGMOID FLEXURE; LAPAROTOMY, WITH FORMATION OF AN ARTIFICIAL ANUS; CLOSURE; RECOVERY.

(Under the care of Lieutenant-Colonel H. R. WHITEHEAD, R.A.M.C.)

VOLVULUS of the sigmoid flexure is practically the only morbid condition of the large intestine which gives rise to acute intestinal obstruction. In most cases simple reduction of the volvulus is insufficient to remedy the obstruction as the volvulus has a great tendency to recur. Colostomy is generally needed, at least for a time. In the following case

the volvulus appears to have persisted owing to the distension of the bowel and to have disappeared as soon as that distension was relieved by emptying the intestine above. Sufficient time appears to have elapsed since the operation to demonstrate the permanence of the relief.

The wife of a sergeant in the Royal Artillery, aged 36 years, was suddenly attacked on Oct. 7th, 1900, at 1 A.M., with most acute abdominal pain and vomiting. For some years the patient had suffered from flatulence, dyspepsia, and colic. She was seen in the morning by Captain F. M. Mangin, R.A.M.C., who was then in charge of Cliffden. She was at this time in great pain, the pain being chiefly referred to the umbilicus. She was vomiting constantly, the vomited matter being the contents of the stomach and mucus. The abdomen was distended and the course of the ascending colon was visible through the abdominal walls. The abdomen was very painful on palpation; the pulse was 100 per minute, thin, and wiry, and the tongue was slightly coated. No purgatives by the mouth were administered, but she was given large enemata. The first enema brought away a small amount of feculent matter from the lower bowel, but no regular action of the bowels took place and no flatus was passed. Captain Mangin diagnosed acute intestinal obstruction and asked Lieutenant-Colonel Whitehead to meet him in consultation on the case. At 3 P.M., when Lieutenant-Colonel Whitehead first saw the patient, she had a typical abdominal expression, her pulse was rapid and wiry, and she was constantly retching and attempting to vomit. The abdomen was acutely painful to touch and was very much distended. Nothing had passed per anum since the night before. The case was evidently one of acute obstruction, and in spite of the short time which had elapsed since the commencement of the attack, her condition was very bad. Lieutenant-Colonel Whitehead recommended immediate operation, and having obtained the patient's consent he proceeded to open the abdomen by a median incision. Captain Mangin rendered valuable assistance and chloroform was administered by Assistant Surgeon Johnstone, I.S.M.D. All aseptic precautions were taken.

The preliminary incision commenced about an inch above the umbilicus and extended in a vertical direction for three inches; this had to be extended at a subsequent stage of the operation. On opening the abdomen a good deal of peritoneal fluid and inflammatory lymph escaped. The cæcum and ascending colon presented in the wound; these were enormously distended. The hand was passed into the abdomen and the course of the large intestine was followed. The upper part of the rectum could be felt empty and collapsed and the sigmoid flexure above full and distended; apparently the gut was bent or kinked on itself at the point of constriction. No constricting band could be made out and the case appeared to be one of this form of volvulus of the sigmoid flexure. As the large intestine was so enormously distended it was feared that any manipulation might rupture the gut and it was determined to evacuate the contents of the bowel. Two stout silk ligatures were passed through the lumen of the gut, just above the cæcum, as in ordinary lumbar colotomy and the bowel was then drawn forward and opened; the sutures were divided and brought out. The gut was pulled as much as possible out of the wound, but owing to the anatomical conditions at this situation this could not be done to any great extent. Lieutenant-Colonel Whitehead then attempted to examine the descending colon in order to untwist the volvulus, but he could not now feel any kink or twist and was afraid that the peritoneal cavity would be much fouled by continuing this procedure. It appeared to him that the relaxation of the intestinal tension by evacuating the contents of the intestine had probably allowed the volvulus to subside, but as he could not be certain that this had occurred, or that the condition might not relapse, he determined to stitch the gut to the skin and to form an artificial anus, which might be closed by a later operation. Before stitching the gut to the skin the abdominal cavity was well flushed by hot boric lotion (2 per cent.) which had been boiled before use.

The patient made an uninterrupted recovery. No signs of peritonitis developed and no rise of temperature occurred after the operation. On Oct. 13th after a simple enema the patient passed a copious formed motion by the natural passage, and almost daily after this a motion was passed per anum after enemata. On the 16th the bowels acted spontaneously, a normal motion being passed. A good deal of feculent matter and intestinal discharge continued to come through the artificial anus. However, from this date the bowels usually acted normally. On Nov. 4th the patient was transferred to the Station Family Hospital, Rawal Pindi; she continued to do well but had occasional attacks of eczema around the artificial anus, although under the influence of resinol ointment the skin kept in very good condition generally. The artificial anus steadily contracted and nearly all feculent matter was passed by the rectum.

On the patient being seen again in January, 1901, the condition was as follows. The patient was in good health and had gained flesh and strength. The artificial anus had contracted very much, the opening in the abdominal walls being now only just large enough to admit a No. 12 catheter. The bowels acted regularly and naturally and nothing in the nature of a spur could be detected. The skin around the fæcal fistula was healthy, but she had suffered from occasional attacks of eczema which were troublesome and painful. The edges of the fistula were cauterised to see if further contraction would follow, but no appreciable change took place. On Feb. 25th the patient was placed under chloroform, the edges of the fistula were pared, and the skin around the edges was freed. The edges of the deep part of the fistula were then brought together by chromic gut sutures, which were cut short and buried, the skin being brought together superficially by salmon-gut sutures. A good deal of vomiting followed the chloroform and on the second day some fæcal discharge forced through the wound and the operation failed to secure direct union, but from this date the opening steadily contracted and on April 15th it had completely healed. When the patient was seen at the end of May the cicatrix was firm and complete recovery had taken place.

Remarks by Lieutenant-Colonel WHITEHEAD.—I have to thank Major B. F. Zimmermann, R.A.M.C., Captin Mangin, R.A.M.C., and Captain T. H. J. C. Goodwin, D.S.O., R.A.M.C., for their care and skill in the after treatment of the case which contributed very materially to the satisfactory result, also Assistant Surgeon Johnstone and Assistant Surgeon Bowder, I.S.M.D.

Reviews and Notices of Books.

Lehmann's Handatlanten: Band VIII., Atlas der äusseren Erkrankungen des Auges. Von Professor O. HAAB in Zürich. Zweite stark vermehrte Auflage, mit 80 farbigen Abbildungen nach Aquarellen von Maler Johann Fink und 7 schwarzen Abbildungen im Text. (*Atlas of the External Diseases of the Eye.* By Professor O. HAAB. Second edition, greatly augmented, with 80 Coloured Illustrations after water-colour drawings by the painter Johann Fink and seven Woodcuts in the text.) Munich: J. F. Lehmann. 1901. Pp. 256. Price 10 marks.

WE have had on several occasions to draw attention to this useful and well-illustrated series of atlases. No less than 18 volumes have been published and several of them have been repeatedly re-edited. The price is reasonable and many of the illustrations are really excellent. The plan adopted is to give in the text which accompanies the plates a description of a group of diseases—as, for example, those of the lacrymal organs. A typical case is then added with a chromo-lithograph of the appearances presented. In the present instance the chromo-lithographs include one of dacryocystitis, a second of lacrymal abscess which has burst without surgical interference, a third showing a lacrymal fistula, and a fourth showing ectasia of the lacrymal sac and incidentally the condition termed "epicanthus." In the text the author lays stress upon the advantage, both as a diagnostic and therapeutic means, of injection of a 0·8 per cent. solution of common salt, but the piston of the syringe must not be made of leather or of asbestos. The diseases with which phlegmonous inflammation of the lacrymal sac is most likely to be confounded are a boil in the immediate neighbourhood of the sac and dental abscess. The treatment succeeds best when the case has not been probed by unskilful hands and when false passages have not been made. When injected by an expert a

solution of from 5 to 10 per cent. of protargol or a 1 per cent. solution of silver nitrate is very effective. Every experienced surgeon will agree with the author in the opinion which he expresses that the treatment of stenosis of the lacrymal passages by means of sounds should only be undertaken by those who are familiar with ophthalmic work, for it presents great difficulties, and more harm than good is often done by incautious sounding. The mucous membrane is very tender, the passages are long and tortuous, and the liability to makes false passages is very great. It is always painful to the patient, and the pain is not removed even by the previous injection of a 5 per cent. solution of cocaine. The author thinks the retention of a sound in the duct after slitting up the canaliculus of doubtful efficacy and prefers excision of the sac. He makes a kind of apology for holding these views, but there can be no doubt that they are sound. Other drawings exhibit the chief affections of the lids, one being a papular syphilid; another blepharitis eczematosa, or as it is named in this country, "ciliary blepharitis"; and others represent hordeolum; molluscum contagiosum; chalazion; blepharochalasis; sugillatio palpebræ, or black-eye, as a result of fracture of the base of the skull; dermoid of the conjunctiva; purulent ophthalmia of infants; diphtheric inflammation of the lids; granular lids; ecchymosis conjunctivæ; follicular and papillary trachoma; spring catarrh; and pemphigus. Then follow pterygium; marginal eczematous ulcer of the cornea, or, as we term it; "phlyctenular ophthalmia"; wounds and burns of the eye; herpes zoster ophthalmicus; eczema of the head and eyes, various affections of the cornea and sclerotic iritis and it, consequences; affections of the lens; sarcoma of the globe; strabismus; and there are still some others. It will be observed that the list is tolerably complete. The atlas is published at a very moderate price and will be very useful to students and to practitioners who have rarely the opportunity of seeing diseases of the eye in the living subject.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By JOHN H. MUSSER, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia and the Presbyterian Hospitals, &c. Fourth edition. 250 Woodcuts. 49 Coloured Plates. London: Henry Kimpton. 1901. Pp. 1118. Price 28*s.*

THE purpose of the author in writing this work has been to deal with the whole subject of diagnosis in its present state of development in clear language and with abundant illustration. Dr. Musser may be congratulated upon the outcome of his labours. A most valuable text-book is the result, containing a vast amount of information set forth in a manner to which no exception can be taken. The practitioner is thus afforded a work of reference upon which he can rely and the facts and principles are presented so as to give to the undergraduate and post-graduate student a rational grasp and practical knowledge of this fundamental part of the science and art of medicine. The book is divided into two parts, the first dealing with the "general" and the second with "special" diagnosis.

The author thoroughly carries out the old dictum: "Tota ars medici est in observationibus." The data to be obtained by inquiry and by observation are detailed at great length, upwards of 400 pages being occupied in the consideration of such matters as the inspection of the face, limbs, skin, conclusions which may be derived from a study of the temperature chart, &c. By a careful perusal of these pages a student may hope to become a veritable Sherlock Holmes in the deductions to be arrived at by mere observation of a patient.

The chapter on Pain is an excellent disquisition on the recognition and clinical value of this symptom; the points to be remembered in distinguishing between the real severity of the pain and the patient's capabilities of bearing it and the conclusions which may be arrived at from its location, mode of onset, operation, time of occurrence, character, distribution, &c., are stated in plain and explicit terms, and will well repay careful study.

A very good description is given of the changes which occur in the hands in the course of various diseases, such as rheumatoid arthritis, nervous affections, &c., and the numerous illustrations aid considerably in the description of the numerous appearances which may be presented.

The chapter on the Examination of the Blood is fully up to date. The various methods adopted are carefully described and the variations in the corpuscles are commented on and illustrated by numerous plates. The remarks on the specific gravity of the blood are scarcely so full as might have been expected, considering the many researches which have been made in this part of the subject.

The second part of the book, Special Diagnosis, is also worthy of high praise. By means of a plentiful use of ingenious diagrams the physical signs which may be elicited on examination of the different systems of the body are well explained and the student should have no difficulty in at once grasping the meaning which the author intends to convey. The diagrams are especially useful in describing the normal and abnormal signs heard on examination of the heart and lungs, and they are also valuable in indicating the deviations from the normal which may be noticed in the palpation and percussion of the abdomen in cases of dilatation of the stomach, ascites, &c. Not only are physical signs thus explained, but symptoms and differential diagnosis are carefully discussed. The illustrations are beautifully produced and add to the value of a trustworthy and instructive manual.

School Hygiene. By EDWARD R. SHAW, Professor of the Institute of Pedagogy, New York University. Teacher's Professional Library. London and New York: Macmillan and Co. 1901. Pp. 250. Illustrated. Price 4*s.* 6*d.*

THE method and scope of this work on school hygiene will at once commend themselves to those who take a practical interest in the physical and mental education of young people, since subjects which possess merely academic and scientific interest are relegated to an entirely subordinate position or omitted altogether, while no pains have been spared to supply the fullest and most complete details of the important and essential methods of pedagogy. It is mainly from the standpoint of the elementary schoolmaster that Professor Shaw has approached the subject, and although, of course, it is to be regretted that matters which exclusively concern higher-grade schools fall outside the scope of the work, nevertheless, from the point of view of higher education, this omission is not of paramount importance, since our own public and high grade schools have little to learn from transatlantic and continental methods except as regards the fundamental principles of hygiene which are common to all varieties of schools; it is these fundamental principles which, as above stated, are handled so admirably by Professor Shaw in the volume under review.

The opening chapters deal with the subjects of school building, lighting, ventilation, and sanitation, and what the author has to say on these questions is not with the object of enlightening the architect, the builder, and the plumber, but for the purpose of putting an intelligent schoolmaster in a position to criticise with authority their work as it affects him and his pupils. As regards the question of temperature and humidity of the air in schoolrooms Professor Shaw insists that the former should not fall below 60° F. and that the latter should be maintained at a level of not less than 50 per cent. These figures are of interest because Dr. Clement Dukes with the weight of his great authority has suggested that a temperature of from 55° to 60° is the proper one for class-rooms, and because, when estimations have been made of the humidity of the air in class-rooms, it is frequently found to

be as low as 30 per cent., and according to the author's personal observations may occasionally fall as low as 20 per cent. Considering the immense importance of the degree of humidity in its effect on the health and comfort of the occupants of a room it is, perhaps, as well to remember that the dry and wet bulb is not a trustworthy instrument for making the determination.

It is difficult to find an opening for criticism in any of the matters dealt with in these early chapters, but perhaps we may be permitted to suggest that if the points of the compass had been appended to the building plans it would not have been without advantage. We would also remark that although *aspect* is admitted to be of importance, in all the plans supplied the class-rooms are arranged completely round the building, so that the light comes indifferently from all quarters; as a rule in modern English schools the class-rooms are carefully grouped in the south and east aspects, leaving when possible the north and west sides for the main hall, kitchens, offices, &c. Again, the hypercritical reader might take exception to a five-foot width of staircase and to the unnecessary allowance of a cloak-room to each class-room, although we believe that this experiment has been made with some degree of success in the Manchester High School for Girls. Further, we cannot altogether agree with the objection which Professor Shaw sees in utilising the basement for a common cloak-room as well as for lavatory accommodation.

What the author has to say on the subject of school furniture will at once command attention. His suggestions as regards design of desk and chair with a view to prevent round shoulders and lateral curvature are admirable in the extreme, but perhaps of less importance in the case of high grade than in that of elementary schools, for in the latter the hygienic home conditions are more liable to favour these physical deformities. It seems almost sacrilege to picture the sixth form of an English public school following in the footsteps of hygienic reform imposed by modern pedagogy, although apart from sentiment it might not be difficult to make out a satisfactory case for improvement. On the question of handwriting Professor Shaw gives rein to a very severe criticism of the methods at present in vogue. He condemns in unequivocal terms the Spencerian script and suggests reforms in the method of teaching and of holding the pen which have so much in their favour that it is possible before long they will be generally adopted. From the bibliography which concludes this admirable little book we cannot understand the omission of G. A. Baginsky's work on "School Hygiene." Previously to the publication of Professor Shaw's own book we had been under the impression that it was about the most important work on the subject.

LIBRARY TABLE.

Typhoid, the Destroyer of Armies, and its Abolition. By LEIGH CANNEY, M.D. Lond. London: Baillière, Tindall, and Cox. 1901. Price 1*s.* net.—King Edward VII., many years ago when Prince of Wales, in opening the proceedings of the International Congress on Hygiene took occasion to put the very pertinent question with reference to preventable diseases that if they were preventable why were they not prevented. Dr. Canney has with great enthusiasm thrown himself into the work of attempting to devise a plan for the abolition, as he believes, of that terrible scourge of armies—typhoid fever. It is the aim and object of his little monograph—after setting forth in a summary fashion the devastations which this fever and some other etiologically allied diseases, such as dysentery and cholera, have caused in all armies of which we have any historical record—to show that these diseases are water-borne and to describe how they can be abolished. Dr. Canney would create a distinct branch of the service with the sole and special object of carrying out his proposals for preventing the recurrence in future of enteric fever, to be known as the Royal Water Corps, and would furnish it with all the necessary transport and appliances for the purpose. Dr. Canney has no difficulty in establishing his first position, for we all know what a dreadful pest this fever has proved itself to be in wars past and present. The long lists of sick grouped together under the heading of "Dangerously ill, enteric where not otherwise stated," which have appeared in the daily newspapers during the war in South Afric would alone suffice to stamp the fact on the memory. It is needless to add, therefore, that Dr. Canney will have everybody's sympathy and best wishes for the success of his scheme. So far, then, all are agreed, but when we come to the discussion of disease-causes and the way to remove them the case is different. Contentious matters arise and the ground becomes much less secure. We are not sure, for example, that it would be universally accepted that contaminated water is so exclusively the source of typhoid fever as he would apparently wish us to believe, although most people would agree with him in thinking that explosive outbreaks of an epidemic nature usually resolve themselves into cases of wholesale water-poisoning, and once this is admitted the importance of the measures advocated by Dr. Canney becomes obvious. There are many who nevertheless hold that the concentration of attention on the search for microbes in the water-supply as the *sole* cause of enteric fever is apt to divert attention from other conditions which may have an important influence in determining outbreaks of the disease. Recent investigations into the sources and methods of infection and pathology of typhoid fever have tended to enlarge and to modify our views in several respects and to introduce some new difficulties in the way of prophylactic hygiene. To enter into these and other points connected with typhoid fever would, however, lead us a long way and we cannot pursue them now. Our readers may have already perused Dr. Canney's letter in the *Standard* of Sept. 10th, 1900, and if they will refer to pages 20, 21, *et seq.*, of the author's present monograph—which only consists of 31 pages altogether and therefore does not take long to read and will repay perusal—they can ascertain for themselves the practical details of his scheme brought up to date of publication. Whether the scheme which Dr. Canney has so ingeniously and industriously worked out is likely to prove a practicable and efficient one under the conditions of war is a matter which requires a good deal of careful consideration to determine. Whether, for example, the estimated amount of mule transport will prove sufficient or whether the demand made on human nature not to drink any water except that supplied by the Royal Water Corps will prove to be too severe and exacting under the conditions of service we cannot say. But it may be possible to apply the words of John Hunter to the matter—namely, not to talk about it but try it.

Lip-reading, or "Hearing by Sight." By Miss G. F. BOULTBEE.—This is a little pamphlet that will be welcome to all those unfortunate people who have become more or less deaf. Miss Boultbee, as the result of long experience, writes in a very sanguine way of the possibilities of lip-reading. Her method is simple and rational, and, as she says, learning to lip-read is a simple process that need not daunt anyone, the only conditions required being the knowledge which a teacher can supply, patience, and perseverance. One useful observation too commonly neglected is made by Miss Boultbee, "when speaking to a deaf person, naturalness and distinction of enunciation are all that is required." Lip-reading has been taught in this country for more than 30 years, and the report for 1900-1901 of the Association for the Oral Instruction of the Deaf and Dumb now before us demonstrates the increasing usefulness of the method and the permanent claim that its teachers have upon public support.

THE LANCET.

LONDON: SATURDAY, AUGUST 17, 1901.

The Employment of Lead Compounds in Pottery.

THE *raison d'être* in regard to the employment of raw lead compounds in the art of glazing pottery has vanished. To our mind Professor THORPE'S latest communication to the Government on this subject is perfectly conclusive and completely justifies this seemingly startling statement. It would be rash, however, to suppose that the vexed question has ended with the results of Professor THORPE'S exceedingly interesting experiments. Obviously there is no justice in depriving the potter of the essential materials of his art unless he can be compensated with another material which is equally effective and equally workable. He must have straw wherewith to make his bricks. Fortunately this material has been found in the shape of fritted lead—although not all fritted lead is innocuous; and this latter point is perhaps the most important feature in Professor THORPE'S report which was published last week and presented to the Government.

As is well known, in fritted lead the raw lead (red lead, white lead, or litharge) is fused or fluxed with silica or other material, a definite compound, silicate or boro-silicate of lead, being formed in accordance with the relative proportion of the materials employed. "Fritts" may thus be obtained which may be either soluble or nearly insoluble in acids. The "fritt" insoluble in acids is comparatively innocuous, but "fritts" may be produced which must be rejected as being little less poisonous or soluble than raw lead itself. Any legislation, therefore, to be effectual in preventing lead-poisoning must ensure in the first place that all the lead used in the processes shall be fritted and in the second place that the lead in addition to being merely fritted shall be so fluxed as to produce a "fritt" which is practically insoluble in dilute acids. Professor THORPE'S experiments in the Government Laboratory have made the issue perfectly clear. The members of the trade admit that fritted lead can be substituted for raw lead without prejudicing the industry. Professor THORPE has shown, however, that not all "fritts" are insoluble in acids, and therefore that not all "fritts" are innocuous, while, still more important, he has brought to light the conditions—the facts as to chemical composition which are accessible to manufacturers—determining the solubility of the lead in "fritts." Moreover, these conditions admit of a wide margin as to the proportion of ingredients, for the amount of lead oxide may vary from 15 to 55 per cent. or more without any necessary increase in the solubility of the lead. The compulsory adoption of "fritts" of a standard formula would thus appear to offer a satisfactory solution of the question, and to this intent two special rules were proposed by the Home Office in 1899—(1) that lead shall be fritted; and (2) that the lead shall be properly apportioned with the other materials in the "fritt" so as to secure a "fritt" practically insoluble in acids and comparatively without prejudice to health. The latter rule necessarily involves the adoption of a standard of insolubility, and a maximum of 2 per cent. of soluble lead was suggested as a criterion of safety upon which glazes might be judged.

After nearly a year's consideration the pottery manufacturers proposed an amplification of Rule 1 by the addition of the words "with some silicious substance" after the word "fritted," but this would cast a vagueness of meaning upon the requirements and, as Professor THORPE points out, would allow of raw lead being used with a minimum or even a merely nominal quantity of silica when a "fritt" would be obtained wholly soluble as regards lead and scarcely distinguishable from fused litharge. But while the principle of Rule 1 is accepted by the manufacturers they object *in toto* to Rule 2 which requires that the "fritt" produced must be practically insoluble in acids and that it must conform to a standard of insolubility. This objection is logically absurd. The danger of raw lead, as the manufacturers admit, is its high solubility and the object of fritting is to reduce this solubility to a negligible quantity. It is surely, then, essential that fritting should be placed on a scientific basis, that the ingredients should be properly apportioned in order to attain the highest degree of insolubility possible, and finally that a test should be adopted whereby the insolubility and innocence of the "fritt" can be determined and placed under control. The complaint of English manufacturers is that they are being asked to accept conditions "never before employed by any potters in the world." They would be much more correct in saying "never before enforced upon any potters in the world," for, as Professor THORPE pertinently points out, the standard is reached without the slightest difficulty in large works abroad, and whether it has been attained by voluntary effort or by the pressure of general regulations does not affect the question of practicability. Evidence is being daily gathered that the proportion of highly soluble glazes and "fritts" is becoming smaller as the manufacturers gain greater experience in compounding them.

The truth is that the anti-progressive habit of the average British manufacturer is hard to break. We are convinced that if only a fair trial with an ordinary amount of patience and intelligence be given to the recommendations so aptly drawn up by Professor THORPE neither the art nor the industry will in any way be injured, but rather their position and dignity will be raised by removing one of the most terrible stigmas on industrial conditions in modern times. One important omission appears to have been made in this otherwise excellent contribution to the subject—and that is the possibility of lead being dispensed with altogether. In a previous report presented to the Government in 1899 on this subject Professor THORPE, with whom Dr. THOMAS OLIVER was associated, was enthusiastic over the advantages of leadless glazes, expressing "no doubt whatever that leadless glazes of sufficient brilliancy, covering power, and durability, and adapted to all kinds of table, domestic, and sanitary ware, are now within

the reach of the manufacturer." The inference is that Professor THORPE's added experience has led him to the conclusion that lead cannot be omitted without disadvantage either to the industry or to the art.

The Presidential Address to the Members of the British Pharmaceutical Conference.

THE British Pharmaceutical Conference met recently at Dublin when the Presidential Address, given by Mr. GEORGE CLARIDGE DRUCE, F.L.S., proved to be of considerable interest to medical men. The President took a somewhat gloomy view of the present condition of British pharmacists, and he stated amongst other things that during the last 40 years the average amount which could be obtained in payment for the goodwill of their businesses had on the whole diminished to the extent of 50 per cent. Pharmacists had therefore several distinct grievances, some of which would be extremely hard to overcome, and he strongly urged members of the conference to unite in facing the difficulties which beset them. No one who is acquainted with life in a country town can doubt that during the last half century the position of a dispensing chemist has by no means improved, and that as a body they have cause for complaint. Forty years ago in a country town there is no doubt that as a rule the dispensing chemist and, perhaps, the bookseller occupied the most prominent positions amongst the tradesmen. The dispensing chemist was, as a rule, better educated than his fellow-townsmen, and so from the first had the advantages which are given by a sound preliminary training; the bookseller was more often a self-educated man, but his constant contact with books and with book-buyers, and the use of his own library, usually made him one of the most interesting men in the town. No one can deny that of late years other tradespeople have to a very great extent taken away the predominant position occupied by the dispensing chemist and the bookseller. This has been greatly due to the general spread of education and somewhat, unfortunately, to the increased and increasing power of money apart from culture.

Mr. DRUCE gave a *résumé* of the progress made during the last century in those sciences which are of the greatest interest to the dispensing chemist. He sketched briefly the discoveries which have been made in regard to photography, and pointed out that the sale of photographic materials was a branch of business well within the scope of pharmacists, because it deals with the sale of materials where scientific knowledge and accuracy of manipulation should be possessed by the purveyor. A brief review was given of some of the chief discoveries which have been made in pure chemistry, and a number of interesting facts were brought together in regard to the commercial use now made of the by-products of manufactures which had previously been wasted, but which of late years have been more and more utilised. A considerable part of the address was taken up with a review of the progress made in biology, in botany, and in bacteriology; but the most interesting part of the discourse was that dealing with matters more intimately connected with the trade of pharmacy. Mr. DRUCE pointed out with some emphasis the fact that from a commercial point of view dispensing chemists are, taken as a body, in a much less satisfactory state than was the case during the earlier and middle parts of the last century. He regretted that at the present time there was a falling off in the interest in science which had been shown by pharmacists 20 or 30 years ago, a state of things made evident by the diminution in the number of those who now meet at the conference. This apathy he ascribed in no small part to the loss of income from which the members of the trade are suffering. In regard to the state of the trade at the early part of the last century Mr. DRUCE thought that it was difficult to form a clear idea as to the position occupied by the chemist and druggist, but that the trade was a many-sided one was not open to doubt. But surely the conditions under which medicine, surgery, and pharmacy were practised during the first half of the last century in London are not mysterious. A great deal of the work fell to the apothecary, and this was the case not only in the City of London but also in the poorer parts of the town and amongst the well-to-do and leisured classes who lived in Soho, in St. James's, and in Mayfair. The physician saw and prescribed for the patients and the active treatment which he ordered was carried out as a rule by the apothecary—in many cases rather a subservient individual who, in the treatment of the upper classes, confined his attention strictly to carrying out the instructions given to him by the physician either by word of mouth or in writing. In those days bleeding was part, and no small part, of the work of an apothecary. It was his function also to cup patients, to supply leeches, to call for the physician's prescription, and, finally, to make up and to deliver the medicine. Many of the apothecaries had open shops and sold other articles of merchandise besides drugs. Of the successors to these apothecaries some became general practitioners as we now know them and some dispensing chemists. The majority of dispensing chemists at the present time doubtless confine their attention to making up prescriptions as ordered and to selling drugs and various other articles more or less intimately connected with pharmacy; though it cannot be denied that here and there may be found gentlemen who add considerable medical and surgical duties to their day's work. It is an unfortunate fact that not only such charlatans as the man PURDUE, referred to on page 501, prescribe for and treat the public medically: many respectable dispensing chemists have large counter practices, as we understand they are called. This, in the interests of everybody, should not be.

Mr. DRUCE said that after the inauguration of an examination by the Pharmaceutical Society an Act of Parliament was passed which gave to the society power to examine and also made the examinations compulsory. As the result of this he believed that the examinations became too purely scientific and that the more practical part of pharmacy was less insisted upon than it should have been. A certain scorn of knowledge of business routine and an undue cultivation of the scientific side of the subject have, therefore, gradually grown up. It is now seriously suggested that the best method

to educate a pharmacist would be to send him to college to attend a certain number of compulsory lectures on biology and botany, and then to allow him to pick up a sufficient knowledge of practical pharmacy without any more systematic teaching. Mr. DRUCE thought that this suggestion, if carried out, would have a disastrous result, for a man so educated would be unable to compete with a person brought up in regular business routine in the way in which the draper's apprentice is trained, and in the general struggle for existence the more highly-educated pharmacist would be unable to hold his own. Mr. DRUCE, in enumerating the causes which prevent pharmacists from the profitable carrying on of their businesses, did not omit to mention the position arising out of the fact that it is legal for a company of persons possessing no pharmaceutical knowledge to carry on the business of pharmaceutical chemists. He pointed out that when the legislature called the Pharmaceutical Society into being "and insisted that every chemist before commencing business should be qualified" it "out-Gilberted GILBERT by allowing seven people—not one of them qualified—to open a chemist's business and to call themselves chemists." Undoubtedly there is room for reform here.

The Case of Concealment of Infants' Bodies at Birmingham.

AMONG other cases dealt with at the assizes recently held in Birmingham was one of great importance from a medico-legal and sanitary point of view, affording as it does another illustration of the defects of our registration system so far as it affects the deaths of infants occurring shortly after birth and the burial of their bodies and of those of still-born infants. EMMA KNOWLES, aged 32 years, who was described as an undertaker, pleaded guilty before Mr. Justice PHILLIMORE to committing a nuisance by neglecting to bury the bodies of certain infants entrusted to her for that purpose in May last. The case created a great sensation at the time in Birmingham and all over the kingdom, being known as "the Birmingham Scandal." In consequence of complaints having been made of an offensive smell arising from the prisoner's residence the police were informed and the officers on searching the cellar found no fewer than 31 bodies of newly-born infants. Dr. J. F. CRAIG, surgeon to the police, was called in and examined the bodies, most of which were in a very decomposed state. One was that of a deceased infant, but most, if not all, of the others were those of still-births, though it was impossible to give a definite opinion in consequence of their advanced state of decomposition. No supposition of foul play was entertained, and the prisoner's excuse was that she, being a widow in very poor circumstances, had taken the money she had received to bury the bodies to buy bread for her starving children. She had since May last given up the undertaking business. The learned judge observed that the case had its serious aspects. It was contrary to public decency and dangerous to public health to treat bodies in this way, and such a practice would facilitate foul play. Having regard, however, to her poverty and other circumstances he would not send her to prison, but would merely bind her upon her own recognisance to come up for judgment when called upon. He trusted that the fact of the conviction would deter other undertakers from doing anything of the kind.

Much credit is due to the Birmingham coroner for the full and searching manner in which the inquest was conducted by him. It was stated at the time in a local paper which dealt severely with the police and mildly with the prisoner that it was a common practice for undertakers to be asked to take charge in their premises of dead bodies awaiting burial. We cannot believe that any respectable undertaker would take upon himself so unpleasant and dangerous a duty in these days, when the providing of public mortuaries is imposed upon all sanitary authorities. Moreover, mortuaries open to the public are to be found in all cemeteries. Such a scandal as that to which we refer ought to be impossible. A glance at the course pursued by those who observe the decencies of life and fulfil the requirements of the law may help to find a remedy. In all cases of infants dying soon after birth both the birth and death are registered and a burial certificate is given. In the case of still-births there is no registration required, but the body is given to an undertaker with a medical certificate of still-birth and it is buried in the unconsecrated portion of the cemetery. The 18th section of the Births and Deaths Registration Act, 1874, imposes a penalty of £10 upon anyone who buries, or procures to be buried, the body of a deceased infant as that of a still-birth, and it is probable that such irregularities are less frequent than they used to be. But so long as there is a sliding scale of fees for the burial of deceased infants and of still-births so long will there be an inducement to fraud. The difference in the two cases varies from half a crown upwards—a very serious consideration to persons who are poor and especially to those who live from hand to mouth. Again, the sum of half a crown is surely more than is required to pay for the ground occupied by the body of a newly-born infant, whether deceased or stillborn. Is it hopeless to ask the Government to bring in legislation requiring the registration of still-births? Possibly it would not be wise to propose that undertaking of burials in this country should be by the Government as it is in France and elsewhere on the continent. In any case, we may reasonably suggest that all burial boards and others having control over churchyards and burial-grounds should afford every facility for the reception of the bodies of infants awaiting burial, that the sliding scale should be abolished, and that the burial fee should be reduced to the smallest proportion.

Annotations.

"Ne quid nimis."

FACTORY LEGISLATION AND LAUNDRIES.

IT is curious that there should be so many difficulties in respect to factory legislation affecting laundries. Considering that laundresses wash precisely those articles which are worn nearest to the skin it would be but natural to anticipate that such an occupation should be subjected to specially strict surveillance. We have demonstrated that, in the absence of such control, linen, after it has been washed, may be contaminated by unhealthy surroundings and brought

into contact with the germs of disease. As a result of our revelations[1] on this subject many laundry companies were floated which professed to have established sanitary steam laundries. This helped forward the evolution that has largely assimilated laundry work to factory work. Yet there has always been a great reluctance to apply the same laws to laundries as are applied to factories and workshops. It was said that the Factory Acts required modifications so as to adapt them to the special circumstances of laundries. There is no difference, however, between laundry work and other kinds of repair that require to be done quickly. Of course, the enforcement of the Factory Acts is not a direct guarantee against the contamination of the linen, but the more thoroughly a trade is inspected and regulated the easier it is for the sanitary inspector to complete the work of the factory inspector. Then, again, there is laundry work considered as a domestic industry with which no interference is proposed, but it is precisely in the small cottage or tenement building that linen may be hung out to dry in proximity with cases of infectious disease. It is also in the privacy of a small dwelling that women and children can best be made to elude the law by working more than the number of hours allowed. It seems as if it will be a long time yet before we are able to put on clean linen with any sense of security. Domestic laundries are not inspected at all and even if such inspection were established by law it would be extremely difficult to carry out in practice. So-called model steam and sanitary laundries seem to offer greater security. But of course a far larger quantity of linen is taken to these large establishments and therefore there is a greater chance that some of the linen may be specifically contaminated. Though it is illegal to send contaminated linen to a laundry, this may often be done unwittingly. Both at Marseilles and in Brittany the last cholera epidemic commenced among laundry women. Linen may well be sent to the wash before the presence of infectious disease is discovered. It will be said that boiling kills the germs, but flannels and sanitary woollen underwear should not be put in boiling water. Then the great danger is the manipulating and sorting of dirty linen in the presence of clean linen, the distribution of germs from the one to the other. Laundries ought to be organised on the same principle as are disinfecting stations. On one side should be one set of carts, baskets, and employés for the unwashed linen; on another and well-separated side should be other employés, baskets, and carts for the linen that has been washed. We seem to be a long way from this ideal. But if laundry work in all its phases were assimilated by factory legislation to other trades and occupations, then as these trades were rendered safer and more wholesome by constant inspection and by special regulations, so also might the condition of the laundries be improved. Since the above was written we regret to see that Mr. Ritchie, acting under pressure from the Irish Members and others, moved successfully to omit Clause 103, which contained the special provisions affecting laundries, from the Bill.

[1] THE LANCET, August 13th, 1877, p. 240.

THE ARMY MEDICAL SERVICE.

THERE seems to be a good deal of uncertainty about everything appertaining to the medical service of the army at the present time. The delay in the declaration of the intention of the authorities must, we should imagine, be detrimental to the interests of the public service and also be productive of a good deal of, as it seems to us, inconvenience to all concerned. No one knows for certain, for example, whether Surgeon-General W. Taylor is to be recalled from India to take up the post of Director-General in succession to Surgeon-General J. Jameson, although everybody believes that such will be the case. It is confidently rumoured that Mr. Brodrick has no intention of issuing any definite order on the subject until the meetings of the Departmental Committee now sitting at the War Office have come to an end. If Surgeon-General Taylor is to be the new Director-General, the post he occupies as Surgeon-General and Principal Medical Officer of His Majesty's Forces in India will have to be filled and the selection of his successor will have to be made. That is an appointment which requires a good deal of consideration, for whoever is to fill the post must have had Indian experience and must be an officer of rank and administrative ability with the prospect of sufficient length of service before him to fulfil, or nearly to fulfil, his tour of service in the appointment; for nothing is worse for the service than frequent changes of the head of it. But this is not all; for other changes must occur in the event of Surgeon-General Taylor being suddenly ordered home and possibly having to be replaced by an officer from this country, when the post vacated by the latter will in turn have to be filled and so on. Any sudden order means, therefore, a great deal of trouble, inconvenience, and expense, which would be avoided by giving to the officers concerned some warning beforehand. No one has any right to complain, or ever thinks of complaining, of sudden and urgent orders when necessity occurs, but it becomes a different matter when no such excuse can be urged, and where a process of "hustling" all round could have been avoided. Whoever the new Director-General is to be we cannot understand why some intimation—of a strictly confidential character if need be—should not be made to the head of the medical service, be he merely an acting or temporary head, in order to anticipate those changes which must occur. The appointment of Director-General of the Army Medical Service was for seven years when Surgeon-General Jameson was nominated to fill it. This period was curtailed to five years, but on the late Director-General's retirement he was awarded the rate of pension that he would have received had he served the full time. Still, he was fairly and honestly entitled to occupy the post for two years more than he did, and we have already expressed the feeling—which was not by any means limited merely to his department—that existed, and still exists, as to the circumstances attending his retirement without any recognition of the great and responsible services which he had rendered. The question of the amalgamation of the two medical services—the Royal Army Medical Corps and the Indian Medical Service—has naturally been strongly, but prematurely, taken up and debated in the Indian press; for, as we announced last week, there is, we believe, no intention on the part of the Home Government or of the Government of India to entertain the proposal in this respect of a sub-committee of the Parliamentary Bills Committee of the British Medical Association, nor will any such scheme for amalgamation be considered.

DIPHTHERIA IN COLCHESTER.

AT the early part of this year[1] and on one or two previous occasions we called attention to the prevalence of diphtheria in Colchester. The matter was brought into particular prominence because the medical officer of health of Colchester did not believe in the antitoxin treatment of diphtheria, which he termed "bowing the knee to medicinal Baal," while he claimed for his own particular way of dealing with the patients under his charge in the hospital for infectious diseases, that it achieved "results incomparably superior and more satisfactory than those given by the serum treatment." While we admitted that it was as impossible for a sanitary authority as for us or for anybody to dictate to a qualified medical man that he should use a certain remedy for a certain disease, we were constrained to point out that the attitude of the medical officer of health towards accepted medical teaching was very inconvenient. The Colchester

[1] THE LANCET, Feb. 9th, 1901, p. 426.

Town Council seem now to have arrived at the same conclusion, and not, we think, much too soon. Diphtheria has been present in the city for at least nine months, while there were seven deaths from this cause in May, eight in June, and six in July. In the middle of July the Sanitary Committee resolved unanimously that it was advisable, where antitoxin treatment had not been administered to diphtheria patients before admission to the hospital, that it should be administered on admission. At the end of the month they instructed the town clerk to communicate with Professor G. Sims Woodhead, and as a result Dr. Louis Cobbett's services were placed at the disposal of the Town Council as a consulting bacteriologist. Dr. Cobbett lost no time in getting out a report upon the position. In this he attributes the persistent presence of diphtheria in Colchester to spread by personal contact, and points out that isolation of the infected is the only efficacious way of stamping out the disease, and that bacteriological examination must be employed to detect the foci. Dr. Cobbett's report concludes with the following recommendations:—

1. That a practical bacteriologist be appointed to make the necessary examinations, and that he be provided with a suitable laboratory and laboratory servant (while this is being arranged swabs might be sent to Cambridge and examined there).
2. That a house and garden be taken, put in charge of a trained nurse, and opened as an isolation home for healthy infected persons. (The house might be situated on the outskirts of the town.) All persons admitted to the home should have a prophylactic injection of antitoxin.
3. That a circular letter be sent to all private medical practitioners (*a*) advising them of what it is intended to do; (*b*) offering them bacteriological examination for their poorer patients free of charge, as well as a free supply of antitoxin; and (*c*) requesting them to submit swabs from all cases which are in the least suspicious, as well as from those which they notify; and from all children and young persons living in houses where these cases occur.

The Town Council of Colchester may not adopt Dr. Cobbett's report entirely, but they will have behind them the solid backing of all the wiser citizens in the town if they follow the majority of his recommendations. It will be a reproach to the community if diphtheria remains longer in their midst to endanger the health and to retard the education of their children.

TWO NEW ROMAN OCULIST SEALS.

SOME two years have elapsed since any announcement of the discovery of a Roman oculist seal, but at the February meeting of the French Academy of Inscriptions a description of two new ones was given, one of which is probably the finest specimen of these interesting relics found for many years. They were unearthed during the excavation of a Roman villa near the ancient city of Nasium in the Department of the Meuse. The best-preserved seal bears a fourfold inscription and belonged to an oculist named Q. Valerius Flaviarius, a personage hitherto unknown. The collyria given by, and the contents of, the four texts, omitting the name which is at the commencement of each one, are as follows: Euodes ad veteres cicatrices ex t(ilia): Dialepedos ad veteres cicatrices ex ti(lia): Diasmyrnes post impetum pituitae ex ovo[1]: Diasmisus ad aspritudines. The first collyrium, Euodes, means simply perfume, but of what it consisted we do not know. There are other collyria of the ingredients of which we are ignorant, such as Anodynum and Diatessarium—i.e., the four ingredients. The cicatrices were affections of the transparent cornea and the pupils and are especially referred to by Pliny, Celsus, and Galen. The second, Dialepedos, used for the same remedial purpose, is protoxide of copper and is frequently stated upon the seals to have been applied for aspritudo, or trachoma. These two collyria, however, Flaviarius tells us, contained another ingredient the first letters of which were "Ti," and it is this which will constitute the special value of this signet, for the word is new. M. Thedenat argues that it stands for "tilia," the lime tree. These oculist seals, after denoting the chief medicament, generally give the vehicle in which it was applied, such as "e lacte muliebri," or, as upon this seal, "ex ovo," and there is no reason to doubt that "ti" indicates a decoction of lime-leaves or limes. For of the tilia, or lime, Pliny expressly tells us that decoctions of its leaves were used for the same medical purposes as those of the wild olive, "for inflammation of the eyes," and of the latter he singularly says, "Miscentur oculorum medicamentis et decoctum foliorum et succus oleastri." The ex ti(lia) of the Flaviarius seal will correspond to the "miscentur oculorum medicamentis" of Pliny, and this reading of the text may be accepted. The third collyrium, Diasmyrnes, myrrh, is very common on the seals, especially as a remedy for post impetum pituitæ (lippitudinis)—that is, after the mucous secretion of ophthalmia. The myrrh here is to be mixed with portions of eggs. The fourth substance, Diasmisus (probably sulphate of iron), is a remedy for the palpebral granulations, or trachoma. It was a favourite ingredient with Roman oculists and is spoken of by Marcellus, Dioscorides, Galen, and Pliny. The possessor of the second seal was one Tiberius Claudius Di....., and it also has an inscription upon the four sides, though only three of these name collyria, and not any of them inform us for what form of eye disease they were prescribed. The three given are "Stactum, delachrimatorium," that is oil of myrrh, to produce tears; "Diasmyrnes," also myrrh; and "Crocodes anodynum," saffron with an anodyne. The fourth text speaks of a sweet, or pleasant, collyrium of "T. Claudius Di..... and Solon." Who this medical Solon was is uncertain, but Galen mentions a Solon as the author of several aural remedies. It would be easy, by means of the Corpus of Oculist Seals of 1897, to trace all the maladies for which myrrh and saffron are designated in them, but as we are not certain as to which of them the owner of this seal applied them it is hardly worth doing.

[1] A seal found in Hungary reads: "Diasmyrnes post impetum ex ovo."

THE EXPOSURE OF FOOD FOR SALE IN THE STREETS.

IN busy and crowded thoroughfares the practice of exposing food for sale is open to the greatest objection. The air of such places presents a terrible bacteriological history and the contamination of food sold in open places becomes an easy possibility. Street dust is full of tubercle bacilli from the detestable habit of spitting, it also may contain the microbes of pus, malignant œdema, tetanus, and septicæmia. It is true that the taint deposited on food exposed for sale may be purged in the process of cooking and micro-organisms may be destroyed, although it has been pretty strongly asserted that the cookery of fish in particular has not been effectual in destroying the typhoid bacillus, instances of typhoid fever having been traced to contaminated yet cooked fish. The avidity with which certain foods would appear to absorb noxious odours is well known. Milk is peculiarly liable to take up unpleasant odours and so, also, is fish. The former is employed when exposed in shallow trays to reduce the smell of paint in a house. Fish cannot be placed in the same parcel as coffee or other pungent-smelling article of food, as it so rapidly absorbs the odoriferous principle. Busy streets are seldom free from offensive effluvia, and it is reasonable to conclude that these would easily affect many articles of food exposed to them. In our own knowledge quite recently complaint was made that a salmon tasted

strongly of creasote. The fishmonger might easily have been charged with selling fish brushed over with a powerfully smelling antiseptic. But it subsequently proved that the Strand (as usual) was "up" and that the stacks of black wooden bricks were giving off a strong naphthalene odour corresponding exactly with the taste of the salmon bought in a Strand shop at the very moment when the bricks were being dumped down on the pavements. This explanation was convincing, but we only quote it as a proof of the liability to contamination of food exposed for sale in the streets under an environment which can seldom be described as hygienic. The fish was probably not injurious to health, but it possessed a decidedly unpleasant taste. Butcher's meat might easily get tainted in the same way. It has been recorded that meat exposed to a current of tobacco smoke has proved powerfully toxic, and this again affords a further illustration of the dangers involved when food is indiscriminately left in contact with air of doubtful purity. It is not desirable that food offered for sale should be exposed to the free influx of air from the streets. If it must be presented to view to attract customers it should be exhibited behind a glass screen, and adequate provision should be made for ventilation with pure air.

FATAL INTESTINAL HÆMORRHAGE IN PNEUMONIA.

IT is now well recognised that the pneumococcus, the usual pathogenic agent of acute pneumonia, may attack other parts than the lung and give rise to a pneumococcic arthritis, pericarditis, endocarditis, or peritonitis. These conditions have been observed almost exclusively by continental writers. The first case of pneumococcic arthritis observed in this country was published by Dr. Edward J. Cave quite recently in THE LANCET of Jan. 12th, 1901, p. 82. Professor Dieulafoy has described pneumococcic ulcerative gastritis which is now well known in France, but only a few cases of pneumococcic ulceration of the intestine have been reported. At the meeting of the Société Médicale des Hôpitaux of Paris on July 19th Dr. M. Chauffard and Dr. M. F. Rathery related the following case. A man, aged 51 years, addicted to alcohol, was admitted to hospital in a delirious state on March 4th. He had been ill for six days. There were signs of consolidation at the base of the right lung and characteristic pneumonic sputum. The temperature ranged between 102·2° and 104° F. On March 8th a new focus of pneumonia was observed at the base of the left lung. On March 10th, at 5 P.M., the patient passed a considerable quantity of liquid blood. The hæmorrhage continued until 10 or 11 o'clock in spite of all treatment. At least two and a half pints of blood were lost. On the following day the patient was extremely weak and anæmic, the pulse was uncountable, and the temperature had fallen to 100·6°. The hæmorrhage recurred in abundance, the blood flowing from the bed to the floor. Gelatin solution was injected and ice was applied to the abdomen. The hæmorrhage ceased at 3 P.M. In the night it again recurred and nearly a pint of blood was lost. Death took place at 10 A.M. on March 12th. On opening the abdomen the colon was found to be distended and "marbled" with brownish patches which were due to clots seen through its walls. Two-thirds of the right lung were in a state of grey hepatisation. In the left lung the consolidation was less extensive. After washing away the clots in the colon a number of punctiform hæmorrhages were found in the transverse and descending parts. At the splenic flexure were five or six greyish-red, superficial ulcers, from one to two millimetres in diameter, with irregular borders and bases formed of a granular, greyish substance. At the lower part of the descending colon was a larger ulcer, of the size of a large lentil, which was surrounded by numerous small punctiform ulcers. In the rectum was an elongated ulcer. Sections of the ulcers showed great congestion of the mucous membrane and of the submucous tissue. The capillaries were greatly dilated and some were ruptured. The submucous tissue was infiltrated with embryonic cells. The microscopic examination of the intestine showed amidst the microbial flora, especially in the position of the ulcers, numerous diplococci which took Gram's stain. The pneumococcus was cultivated from the lungs and blood. Widal's reaction was absent. Examination of the few recorded cases of intestinal hæmorrhage in pneumonia shows that the hæmorrhage may be slight or profuse and fatal. The ulcers in the present case corresponded both anatomically and clinically to Professor Dieulafoy's "*gastrite ulcéreuse pneumococcique.*"

STREET NOISES.

AS we write there are seven newsvendors visible from our windows. Six of them are yelling "Three o'clock Winner" and one remains silent. No policeman is in sight and if he were it would make no difference. We pointed out in THE LANCET of June 20th, p. 1848, that the police will only act after a personal complaint, and then only if the applicant will promise to attend at the police-court at some date in the more or less immediate future. We also pointed out that the London County Council by-law on the subject of the yelling of newspaper-sellers was made of no effect and we also suggested that persons annoyed by such noises should worry their Council member. We are glad to see a letter in the *Standard* of August 13th from a gentleman resident in Finsbury-circus, mentioning all the points to which we have so often referred in our own columns, and stating that a petition is about to be forwarded to the London County Council on the subject. We say again for about the fiftieth time that there is no reason why newsvendors should shout. The nuisance is absolutely intolerable and must be put down. We may add that the writer of the letter to which we have referred is Mr. Thomas Bowden Green, 1, Finsbury-circus, London, E.C., and that he asks all interested in the matter to communicate with him.

GENERAL PARALYSIS AND SYPHILIS.

DR. W. H. B. STODDART contributes to the July number of the *Journal of Mental Science* a critical digest on the relation of general paralysis to syphilis, a question of great interest in view of the possibilities of the prevention of general paralysis by limiting the spread of syphilis. The fact that (in 1857) Esmarck and Jessen, and subsequently Kjelburg—all Scandinavians—were the first to suggest the syphilitic origin of general paralysis was in itself a strong point in favour of the view, since syphilis was treated in State hospitals in Scandinavia, and therefore the history of previous infection of general paralytics could be easily obtained. It is said that the clinical signs of tertiary syphilis in the form of affections of the skin, eyes, and liver are rare in cases of general paralysis, and, according to Dr. F. W. Mott, the latter affection is more likely to occur in persons who have had syphilis with few or no tertiary manifestations. The relative prevalence of antecedent syphilis in general paralytics has been variously stated by different authors. Thus, Magnan gives the proportion as 4 per cent., Siemerling as 11 per cent. (in women), Kraepelin as 34 per cent., Westphal as 40 per cent. (in women), Binswanger as 50 to 69 per cent., Erb as 52 per cent., Mendel as 75 per cent., Conolly Norman as 80 per cent., and Savage as 80 per cent. Dr. Stoddart gives reasons for thinking that the higher figures (75 to 80 per cent.) represent more closely the real facts of the case, for it is not always easy to determine the occurrence of antecedent syphilis by inquiry into

the patient's past history. The presence of a soft chancre does not, according to Erb, permit the total exclusion of syphilis, for that author writes: "There are numerous cases of so-called soft chancre which are followed later by secondary and tertiary symptoms. I have notes of several cases where after apparently gonorrhœa, with or without buboes, (urethral chancre?) secondary symptoms followed." The fact that inherited syphilis has been ascertained to be present in nearly all cases of juvenile general paralysis, about 90 of which are known in medical literature, also strongly favours the view of the syphilitic etiology of general paralysis. The hypothesis which has been advanced that syphilis is usually acquired during the early or prodromal stages of general paralysis, when the patient is addicted to sexual excess, is, says Dr. Stoddart, apparently not supported by the observations of Marandon de Montyel[1] who has shown that sexual excess is not such a common symptom of general paralysis as has been supposed, the sexual instinct being exaggerated in but 37 per cent. and diminished in 63 per cent. of his cases. "These numbers agree in a general way with those of Christiani and Oebeke who only differ in placing sexual excess among the causes instead of among the symptoms of general paralysis." The relative prevalence of general paralysis in various professions and occupations is such as accords with the view of its syphilitic origin. For example, 90 per cent. of the cases of general paralysis observed by Professor Krafft-Ebing[2] of Vienna were military officers. Moreover, Hirschl found but one Roman Catholic priest among his 200 general paralytics, and Krafft-Ebing had no instance among his 2000 cases of general paralysis of the disease occurring in a Roman Catholic priest. Salaris states that there was only one case of general paralysis occurring in Sardinia in a priest during the years 1891 to 1897, and that that priest had certainly had syphilis. Dr. Stoddart concludes that "syphilis is so frequent an antecedent of general paralysis that the non-syphilitic cases (if such exist) may for the present be regarded as a negligible quantity ..... and that hardly anybody runs the risk of getting general paralysis who has not had syphilis."

THE RESIDENCE OF A MEDICAL OFFICER OF HEALTH.

IT was recorded in THE LANCET of May 11th, p. 1373, that the Gelligaer and Rhigos District Council, a rapidly developing mining district in Wales having a rateable value of about £100,000, had imposed a condition upon the re-appointment of their medical officer of health, Dr. W. W. Jones (Merthyr), that he must reside within the parish of Gelligaer, one of the two constituent parishes of the council's area. There has been a lengthened controversy between the council and the Local Government Board on the matter. It was argued for the medical officer that Merthyr was a natural centre. The whole question reached the crisis at a recent meeting of the council when the following letter was read from the Local Government Board:—

"I am directed by the Local Government Board to acknowledge receipt of your letter of the 5th inst. with further reference to the proposal of the Rural District Council of Gelligaer and Rhigos to require their medical officer of health to reside in the parish of Gelligaer. The Board considered the representations made by the district council in this matter but they are strongly of opinion that this is not a case in which the district council should insist upon the proposal. The geographical features of the district considered in connexion with the railway communication appear to the Board to point to Merthyr as the most convenient spot for the residence of the medical officer of health, as from that town he could more easily visit both the outlying portions of the rural district than if he had resided in one of those portions. Having regard to this and to the fact that Mr. Jones as possessing a D.P.H. has a qualification for the office of medical officer of health beyond those of an ordinary medical practitioner the Board should be glad if the rural district council could see their way to withdrawing the condition they propose to attach to his re-appointment."

The section of the council who had imposed the condition desired to adjourn the consideration of the letter, as it was patent to them that in consequence of the absence of three members they would be outvoted. The chairman, however, submitted that the letter was an olive branch held out to the council by the Local Government Board and that therefore it should be acted upon. On a vote of five to four it was decided to suspend the standing orders, and subsequently by the same vote the resolution embodying the condition of residence was rescinded and Dr. Jones was re-appointed unconditionally for one year. During the many discussions at the previous meetings considerable excitement has prevailed, which now, we hope, will be abated. One thing should be mentioned. Neither party to the controversy ever had anything but praise for the work and administration of the medical officer whose residential qualification was in question.

PSORIASIS OF THE NAILS RECURRING WITH PREGNANCY.

IN the *Scottish Medical and Surgical Journal* for May Dr. W. E. Foggie has described the following curious case. A woman, aged 28 years, nine years married, was seen on August 9th, 1899. She was in her sixth pregnancy. At the fifth month in this as in every preceding pregnancy except the first, an affection of the nails began with a hot and painful sensation at the ends of the fingers and thumbs. Soon the nails began to separate at their free margins and sides and to be raised from their beds by a scaly accumulation. Their surfaces became grey, lustreless, and longitudinally fluted. Within a month or two almost every nail had become separated from its bed. By October the nails were mostly broken off and the beds were bare except for a small margin of new healthy nail at the root. Some of the growing nails showed considerable transverse irregularities. At the beginning of 1900 the nails were almost normal. In April, 1900, when the patient was again in the fifth month of gestation, she again came under observation with the same sensations under the nails. In the two latter attacks there were distinct patches of psoriasis on the left elbow, right knee, and back of the left hand. The affection of the nails in this case corresponds in most of its features with what Mr. Hutchinson has described as "psoriasis of the nails"—a condition characterised by accumulation of scales beneath the nails and separation of the nail from its bed, which begins at its free edge. Various skin affections, such as dermatitis herpetiformis, urticaria, pruritus, and eczema, have been observed in connexion with pregnancy. But psoriasis, to say nothing of psoriasis of the nails, does not appear to have been described. Dr. Radcliffe Crocker, however, says that psoriasis may clear up during pregnancy.

THE RECORDER OF LIVERPOOL AND INSANITARY PROPERTY.

THE Recorder of Liverpool, in his recent charge to the grand jury at quarter sessions, referring to the presentment of the corporation for the demolition of certain insanitary property, remarked that the Liverpool Sanitary Amendment Act, 1864, provided means by which the corporation could get rid of those parts called "slums" such as often abounded in a great city, where, owing to insanitary conditions, disease and wretchedness became rife. It was always fitting in such great measures that they should prevent demolition pressing

[1] Archives de Neurologie, July, 1900.
[2] Die Progressive Allgemeine Paralysie, Wien, 1894.

harshly upon the owners of the property, and in deciding as to whether any of the properties recommended for demolition were insanitary those interested in the property should have the opportunity of adducing evidence, if they thought fit, in opposition to the recommendations of the medical officer of health. Evidence was given by the medical officer of health (Dr. E. W. Hope), Dr. William Carter, and Sir Henry Littlejohn (medical officer of health of Edinburgh) as to the utterly insanitary condition of the various properties which had been scheduled. In reply to remarks by objectors to the demolition of their property, Dr. Hope said that the corporation were providing suitable dwellings within reasonable distance from the houses from which the people were to be dispossessed, some in the same streets and others in contiguous streets. The grand jury, of which a section had visited the houses which the owners contended required only structural alterations, reported that nothing in the way of structural alteration could, in their opinion, make them habitable. With the exception of a few tenements which were capable of being rendered sanitary by converting back-to-back tenements into houses with a through draught, all the remaining properties were condemned in very strong terms by the grand jury, who said that they were in a "villainously" unwholesome condition. It doubtless appears harsh to dispossess poor people of their dwellings, but anyone familiar with certain Liverpool slums could not fail to support the recommendations of the medical officer of health to demolish houses, back-to-back in most instances, utterly devoid of ventilation, and being mostly houses in courts upon which the sun never shines.

HYGIENE FOR THE COW.

THE great public interest which has been quickened, if not for the first time really aroused, by the British Congress on Tuberculosis, justifies the hope that the medical profession in this country will have behind it the force of public opinion and of public money in its efforts to lessen tuberculosis, and to stamp out the sources from which it spreads. The new and emphatic line of argument taken up by Professor Koch at the Congress has served to heighten the general interest. Roughly speaking, Professor Koch declares that all phthisis arises by inhalation and that a man may eat tuberculous meat and drink tuberculous milk to his heart's content. If this were true, precautions as to the supply of meat and milk would be matters of comparative indifference. At present, however, Professor Koch's position is not proved, and there is a strong consensus of opinion that though the most important steps of all in checking the spread of consumption are those of hygiene which will reduce infection by contact and inhalation, yet milk and meat must be supplied free from the tubercle bacillus if we are thoroughly to combat the disease. As regards the meat-supply Mr. Shirley Murphy's paper in THE LANCET of August 3rd, p. 271, shows how backward we have been in instituting systematic inspections. The letter of a non-medical correspondent, which we have recently received, points out, what is only too familiar to our medical readers, that as regards milk we have in most cases no criterion at all of the purity of source from which it is derived. If fresh air and cleanliness are necessary for human beings to ensure freedom from the attack of tubercle, so, too, are they for cattle. The cow, as well as ourselves, our correspondent contends, needs open-air treatment, whereas too often that most useful animal practically lives in ill-kept byres, dirty cowsheds, and with tuberculous companions. Any railway journey through a country district in England will teach the traveller how little open freedom there is for the cattle. More time in the open air and much more carefully kept accommodation are the great needs of the cow in the country, and in demanding these our correspondent is laying stress upon one weapon in the campaign against tuberculosis which theoretical and unproven considerations must not allow us to undervalue.

THE ANTI-MALARIAL EXPEDITION OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

THE Liverpool School of Tropical Medicine received a telegram on August 9th from Major Ronald Ross, late I.M.S., stating that he had reached Accra from Lagos and had had a very satisfactory interview with the Governor of the Gold Coast, who promised every assistance to the expedition of the Liverpool School of Tropical Medicine if another delegate were despatched to carry out operations on the Gold Coast. The committee of the school contemplate sending out at an early date an expert to conduct a campaign against the malarial mosquito and malaria on the Gold Coast.

THE NEW POOR-LAW INFIRMARY AT HALIFAX.

THE Halifax Guardians have recently erected, at an expense of some £100,000, a new workhouse hospital. This hospital naturally wants a staff and the guardians are accordingly advertising for a medical officer. This official is to be the responsible medical officer and the head of the medical staff. There will be in addition another visiting physician and a junior medical officer who will be resident. The salary of the principal medical officer is to be £105 per annum, subject to the usual deduction for superannuation, and the appointment is to be subject to the duties being "hereafter defined." So far there appears nothing unusual in the advertisement except the clause referring to the duties being "hereafter defined," a clause which obviously might mean a great deal. But we learn from the local press that the circumstances which led to the appointment being advertised are somewhat peculiar. Dr. T. M. Dolan has been for 30 years the medical officer to the present Halifax workhouse infirmary. For performing the duties of this office—there are 350 beds and there is no question as to the manner in which these duties have been performed—Dr. Dolan receives a salary of £200 per annum. In fact, so impressed were the guardians with Dr. Dolan's worth that they offered him the post of medical officer to the new infirmary without any addition to his salary. Nothing could have been more advantageous. He was to have a free hand, he was to get the whole establishment into working order, he was to have the oversight of 400, instead of as at present 350, beds, and all for nothing. True, at the end of the first year the guardians were going to think about a salary, "if any, and if so what." Dr. Dolan, however, did not see his way to accept this generous offer and hence the advertisement. It may be said: "Why should Dr. Dolan expect an increase of salary for being put in charge of a new and doubtless much improved building?" For one thing, there are 50 more beds than in the present infirmary and, for another thing, the whole work will have to be organised. Another question we may ask is: "Why should the guardians, who pay Dr. Dolan £200 per annum for looking after 350 beds, now only offer their new medical officer £105 for looking after 400 beds?" Dr. Dolan will apparently continue to draw his £200 per annum as medical officer to the workhouse and will also apparently have next to nothing to do, for we do not suppose that the present infirmary at Gibbett-lane will be kept up as well as the infirmary at Salterhebble. As regards the offer to Dr. Dolan we should like to recall to the notice of the Halifax Guardians a passage in Gilbert's delightful play *Engaged*. We mean the passage where the thrifty Cheviot Hill describes the game of "tailoring" to his *fiancée*. "It's a very good game," he says, "you shall be the clever little jobbing tailor, and I'll

be the particular customer who brings his own materials to be made up. You shall take my measure, cut out the cloth (real cloth, you know), stitch it together, and try it on; and then I'll find fault like a real customer, and you shall alter it until it fits, and when it fits beautifully that counts one to you." To the ordinary mind it would seem that the guardians might have offered Dr. Dolan the post of medical officer to the new infirmary at a rise, on his present salary, of £100 per annum. But they did not do this, hence the advertisement.

THE DISTRIBUTION OF PLAGUE.

A TELEGRAM from the Governor of Cape Colony, received at the Colonial Office on August 7th, states that for the week ending August 3rd the cases of plague in the Cape Peninsula were as follows: Malays, 1; Europeans, coloured persons, Indians, Chinese, and natives, 0. Corpses found, 0. The deaths were: Malays, 1; Indians, 1; Europeans, coloured persons, Chinese, and natives, 0; total 2. The total cases up to August 3rd were: Europeans, 186; coloured persons, 330; Malays, 62; Indians, 14; Chinese, 1; natives, 142; total, 735. The total deaths up to August 3rd were: Europeans, 64; coloured persons, 175; Malays, 45; Indians, 12; Chinese, 0; natives, 61; total, 357. At Port Elizabeth for the week ending August 3rd the total cases were: natives, 1; no corpses found and no deaths. The total cases to August 3rd were: Europeans, 7; coloured persons, 7; Indians, 2; Chinese, 1; Japanese, 1; natives, 16; total 34. The total deaths to August 3rd were: Europeans, 1; coloured persons, 4; Indians, 1; Chinese, 1; natives, 6; total, 13. The total cases of plague in all other places were: Europeans, 5; coloured persons, 1; natives, 4; total, 10. The total deaths were: Europeans, 1; natives, 1; total, 2. One case in persons under naval and military control occurred in the person of a native from the remount camp. The Port Elizabeth area of infection remains unchanged. In Mauritius, for the week ending August 8th, no cases of plague had occurred. In all Egypt during the week ending August 4th 6 cases of plague and 1 death from the disease have been reported. Of these, 5 cases occurred among natives and 1 case and 1 death among Europeans (the latter an Italian fisherman without domicile). 3 cases were reported from Zagazig, 2 cases from Port Said, and 1 case and 1 death from Alexandria.

THE OVERCROWDING OF ISOLATION HOSPITALS.

UNDER the heading of "Scarlet Fever in South Shields and Jarrow" a correspondent of a South Shields contemporary draws attention to the overcrowding which limited isolation accommodation may at times cause. He mentions more particularly the much-to-be-condemned admission of too many patients—a practice which is liable, as he points out, to lead to more than one child occupying a single bed. In our view, such a proceeding as this is open to severe criticism, and we trust that it but very rarely occurs. The fact that children at their own homes often occupy the same bed does not in any way justify such a course in a public hospital to which parents are often persuaded to send their children for the safety of the public health. If it be suggested that under any circumstances children are better at a fever hospital than in their own homes we demur altogether to the proposition. It is probable that in the vast majority of cases children in a fever hospital are better housed and looked after than they would be at home, but this is not an invariable rule, and if two children were allowed to occupy one bed such advantage would be considerably curtailed. It seems to us that it is the duty of a medical officer of health, or of a medical superintendent of a fever hospital, to withstand as far as he possibly can any such overcrowding as is here in question. A public official is often placed is a very difficult position in this respect with a sanitary authority which does not recognise sufficiently the difficulties and which sees no reason for adequate air-space for each patient. But it is nevertheless incumbent upon the medical officer to take up a firm stand and to point out that any responsibility with regard to overcrowding must rest with the district council or hospital authority; indeed, there might be advantage if medical officers were compelled to report every case of hospital overcrowding to the Local Government Board, in order that such officers might relieve themselves of responsibility as far as relief in this sense is practicable. If the sanitary authority compels or persuades a parent to allow his fever-stricken child to be isolated for the public safety that authority is bound to accord to such child every protection against infection of whatever character. The records of the Metropolitan Asylums Board bear ample testimony to the bad effects of overcrowding in the scarlet fever wards, and we believe that the medical superintendents of the Board have made a stand against undue demands upon their space. Briefly stated, overcrowding means increased risk of infection, a chance of less attention in nursing, and finally, enhanced liability to certain complications.

THE SALARY OF A MEDICAL OFFICER IN THE HIGHLANDS AND ISLANDS.

THE following copy of an advertisement from the *Glasgow Herald* of August 7th, 1901, has been sent to us for comment:—

MEDICAL.—Wanted, by the Parish Council of Lochbroom, a Medical Officer. Salary at the rate of £125 per annum, exclusive of £10 paid by County Council for services as Medical Officer of Health. Comfortable house and garden, which must be occupied by the gentleman appointed and provided at a reasonable rent. Applications, with testimonials, to be lodged with D. S. Ross, Inspector of Poor, on or before the 19th prox.

Ullapool, 20th July, 1901.

We do not recommend any medical man to apply for this vacancy without making full inquiry from the previous medical officer as to the work to be done. We are informed that the salary is totally inadequate, while out of the pittance a rent has to be returned to the parish.

THE King has appointed Sir Francis R. Cruise, M.D. Dub., Fellow and ex-President of the Royal College of Physicians of Ireland, to be one of the honorary physicians to His Majesty in Ireland, in the room of Dr. William Moore, deceased.

THE next Congress and Exhibition of the Sanitary Institute will be held in Manchester in the second week of September, 1902, under the presidency of the Right Honourable the Earl Egerton of Tatton.

THE report of the Indian Plague Commission is now on its way to India for presentation to the Indian Government. When this has been done it will be laid before Parliament and issued.

MR. JOHN BROWN, L.R.C.P. Irel., has been promoted from Honorary Associate of the Order of the Hospital of St. John of Jerusalem to be Knight of Grace.

ASYLUM REPORTS.

Dundee Royal Asylum (Annual Report for 1900).—The average number of patients resident during the year was 411, comprising 171 males and 240 females. During the year 125 patients were admitted, of whom 55 were males and 70 were females. Of these, three males and 15 females were not first admissions. Dr. James Rorie, the medical

superintendent, states in his report that the number of pauper patients admitted during the year has been greater than during the previous year, but still considerably under the average of the years 1895 to 1897. In connexion with the admissions it is noted that while only one patient was received from another asylum, four were admitted from lunatic wards of poorhouses, 13 from the ordinary wards of poorhouses, 17 from the police office, two from prison, and five from the Dundee Royal Infirmary. "The advanced age of many of the patients on admission is also remarkable, three having completed their sixty-seventh year, one the sixty-ninth, one the seventieth, one the seventy-second, two the seventy-fifth, one the seventy-seventh, one the seventy-ninth, one the eightieth, and one the eighty-third year." During the year 43 patients were discharged as recovered, or 10·46 per cent. of the average number resident. The deaths during the year amounted to 38, or 9·24 per cent. as calculated on the same basis. Of the deaths two were due to epilepsy, six to organic dementia, six to general paralysis, six to phthisis and other forms of tuberculosis, and seven to senile decay and heart disease. The rest were due to other causes. In one case death was due to rupture of the heart, a comparatively rare pathological condition. This patient, a female, had been a resident in the asylum for nearly eight years and was to all appearance in her usual state of health. "While sitting on one of the terrace seats she was seen to fall off, was immediately attended to but found to be dead." Post-mortem examination showed rupture of the heart and hæmorrhage into the pericardium. An important event of the year was the erection of buildings for private patients of the better class. The spot chosen was an admirable one affording extensive views of the Tay and the Fife and Perthshire hills and surrounded by woods in the vicinity. The building itself has been fitted with every regard to the comfort and convenience of patients, "and the avoidance of even the appearance of confinement or restraint has been carefully kept in view." Dr. Rorie points out that changes in the staff of nurses and attendants continue to be greater than is desirable. No accident or casualty has occurred during the year that is worthy of notice. The board of directors of the asylum state in their report dated June 17th, 1901, that the new private asylum will soon be ready for occupation. Various legacies, amounting in all to over £700, have been intimated to the institution during the year. A loan of £30,000 has been obtained from the Scottish Equitable Life Assurance Society, the rate of interest payable being 4 per cent. Annuities and donations have been received during the year amounting to £111. The profit on the farm for the year was £215 2*s.* 7*d.* The Commissioner in Lunacy in his report states that the day-rooms, dormitories, and lavatories are maintained in excellent order and were throughout scrupulously clean and that the beds and bedding were in good order. The behaviour of the patients was, except in a very few cases, contented and orderly. "The personal condition of both sexes, and the tidiness of their clothing, were satisfactory. The industrial employment and amusements of the patients receive due attention."

Wonford House Hospital for the Insane, near Exeter (Annual Report for 1900).—The total number of patients under treatment, including voluntary boarders, was 167. The admissions during the year amounted to 34, not including six voluntary boarders. This is an increase of nine certified patients and of two boarders as compared with the previous year. Dr. P. Maury Deas, the medical superintendent, states in his report that of the admissions 11 were cases transferred from other institutions and therefore not hopeful cases as regards the prospect of recovery. Of the new admissions 15 were considered favourable cases as regards recovery, and of these three were discharged as recovered by the end of the year, while eight more have since recovered or are convalescent. The total number of cases discharged as recovered during the year was 11 (four gentlemen and seven ladies). Seven patients were transferred to other institutions. The deaths during the year amounted to four, being a death-rate of 3 per cent. on the average number resident, which is the lowest rate since 1895. One death was due to senile decay, and one each to general paralysis, heart failure and chronic cystitis, and concussion of the brain. Many of the patients in residence are of advanced age. At the end of the year 50 out of a total of 134 patients were upwards of 60 years of age, and of these 16 were between 70 and 80 years, and seven were upwards of 80 years. The Commissioners in Lunacy state in their report that much improvement has taken place since their previous visit in regard to renovation, painting, and re-decorating the wards. The patients were quiet and well behaved with the exception of some of the lady patients who were noisy and rude. The cost of maintenance is £2 2*s.* 11*d.* per head weekly, so that the institution "continues to do really charitable work, and as long as this is the case we hope it will flourish more and more."

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on August 6th, Dr. T. R. FRASER, the President, being in the chair.

The PRESIDENT referred in respectful and feeling terms to the death of Her Imperial Majesty the Empress Frederick of Germany. On the motion of the President it was resolved unanimously to send a telegram of condolence to His Majesty the King in the following terms:—

The Private Secretary of His Majesty the King,
Cowes, Isle of Wight.

Please convey to His Majesty the King the respectful and sincere sympathy of the President and Fellows of the Royal College of Physicians of Edinburgh on the occasion of the sad death of Her Imperial and Royal Highness the Empress Frederick and Princess Royal of Great Britain.

And, further, it was decided to send a telegram of condolence in similar terms to His Majesty's Ambassador at Berlin for presentation to His Imperial Majesty the German Emperor.

Dr. Lewis Campbell Bruce was introduced and took his seat as a Fellow of the College.

Douglas Chalmers Watson, M.B., C.M., M.R.C.P. Edin., was admitted by ballot to the Fellowship of the College.

On a ballot the following candidates were admitted to the Membership of the College after examination. William Edward Home, M.D., C.M. Edin., London; James Burnet, M.B., Ch.B. Edin., Edinburgh; Alexander Goodall, M.D. Edin., Edinburgh; and George Norman Meachen, M.B., B.S. Lond., London.

The REGISTRAR reported that since the last quarterly meeting 67 persons had obtained the Licence of the College by examination.

The SECRETARY laid on the table the annual statement by the governing board of the School of Medicine of the Royal Colleges in terms of the constitution. The report indicated that the number of classes during the winter session 1900–1901 was 37 and during the summer session of 1901 41, and that the number of students during the winter session was 1160 and during the summer session 1119. The College re-elected the vice-president (Dr. J. Andrew) and Sir John Sibbald, M.D., F.R.C.P. Edin., who retired by rotation as representatives on the governing board of the School of Medicine of the Royal Colleges.

Intimation was made that Dr. G. A. Gibson had, on the nomination of Dr. Alexander Morison, been appointed Morison lecturer for two years, 1901–1902.

Mr. Stuart Macdonald, M.B., C.M., M.R.C.P. Edin., was after examination recognised as a lecturer in pathology, the President conferring on him the certificate of qualification.

A committee of award was appointed in connexion with the Victoria Jubilee Cullen prize. The prize, which was instituted by His Excellency the late Dr. R. H. Gunning, is of the value of £100 and is awarded every four years "for the greatest benefit done to practical medicine." The prize is open to Fellows, Members, and Licentiates of the College. The award will be made in June, 1902.

On behalf of Lady Jenner the President presented to the College a photogravure of Mr. Frank Holl's portrait of the late Sir William Jenner, Bart.

It was agreed unanimously to send a congratulatory address to Professor Virchow on the occasion of the eightieth anniversary of his birthday.

WESTON-SUPER-MARE HOSPITAL.—As a result of the recent *fête* held in aid of the funds of this hospital the sum of £570 has been handed over to the institution.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT CHELTENHAM.

THE GENERAL MEETINGS.

THE THIRD GENERAL MEETING.

THE following is the report of the Third General Meeting, at which, as we mentioned in our issue of August 10th, the concluding portions of the Report of the Constitution Committee were passed.

The first clause discussed was No. 16, dealing amongst other matters with the payment of expenses of representatives travelling to attend meetings.

Mr. R. J. PYE-SMITH (Sheffield) suggested that instead of the words "first-class travelling expenses" the terms should be "first-class railway travelling expenses." But the proposal was withdrawn upon Dr. S. WOODCOCK (Manchester) asking how it was possible for medical men from Ireland to cross the Channel in a railway carriage.

According to Clause 16 the expenses of representatives were to be defrayed by the Association. It was pointed out that this might mean that the Branches were to pay these expenses. It was therefore moved by Mr. J. S. WHITAKER (Yarmouth), seconded by Dr. A. B. RITCHIE (Manchester), and carried that the expenses should be defrayed by the central funds of the Association. After various motions had been proposed without success to pay for second-class travelling instead of first, to pay only for third-class travelling and not to pay any expenses at all, Clause 16 was then put to the meeting and declared passed as follows:—

Annual Meeting, General Business, General and Sectional Scientific, and Representative Meetings.

16. That there be held annually, for the transaction of the various affairs of the Association, a general business meeting and general and sectional scientific meetings, all open to all members of the Association, and a representative meeting, open only to representatives elected by the divisions and to members of the Council. That the general business, general scientific, and representative meetings be held at the same place and time of year, but separately, and on such days and at such hours as not to conflict with one another, and that

Representation of Divisions.

it be part of the duty of representatives of divisions to attend the general business meeting. That the said representatives be elected one by each division of not less than 50 members, or by each such group of divisions of not less than 50 members in all, as may be formed for such purpose by the Re-organisation Committee hereinafter mentioned, with the sanction of the Council, but so that the total number elected throughout the Association do not exceed 300. That in the

Mode of Election.

United Kingdom each representative be elected in a general meeting of the constituency held during the three months immediately preceding the annual meeting, and in the colonies and India either in the aforesaid manner or by voting papers, as may be determined by the constituency. That the

Payment of Expenses.

first-class travelling expenses within the United Kingdom of each such representative and member of Council attending the annual meeting be defrayed by the central funds of the Association, provided that he be not absent from any representative or general business meeting without good cause being shown to the satisfaction of the Council.

Clause No. 17 was agreed to as follows down to Sub-section II., par. A:—

Business of Annual Meetings.

17. That the business of the annual meetings named in the preceding recommendation be severally restricted to the following matters—namely:—

General Business Meeting.

(A) The general business meeting.

Election of Officers.

(i.) To elect such officers and members of committees as, by the articles or by-laws, may be appointed to be so elected.

Consideration of Financial Statement of Council and Reports of Committees.

(ii.) To consider the annual financial statement presented by the Council, the reports of committees instructed to report to such meeting, and motions relating to the adoption of such statement, or of such reports in whole or in part.

Dr. E. J. SLADE-KING (Ilfracombe) moved, and Dr. J. GROVES (Carisbrooke) seconded, the following, which was duly carried:—

That it be an instruction to the committee in Recommendation A to be appointed to frame the new by-laws and articles that the Council do present to the meeting of representatives an estimate of the revenue and expenditure for the coming financial year. A copy of such estimate to be furnished to the secretary of each division not less than one month before each meeting so that the divisions may know what they have to deal with.

The remainder of Clause 17 was then carried as follows:—

The General and Sectional Scientific Meetings.

(B) The general and sectional scientific meetings to deal with such matters relating to the medical and allied sciences and in such manner as may be determined by the Council.

Representative Meeting—Election of Officers.

(C) The representative meeting.

(i.) To elect such officers and members of committees as, by the articles or by-laws, may be appointed to be so elected.

Consideration of Reports.

(ii.) To consider reports of the Council, reports of committees instructed to report to such meeting, and motions relating to the adoption of such reports in whole or in part.

Questions from the Council.

(iii.) To deal with matters submitted by the Council to the divisions for the purpose of decision by the representative meeting.

Alterations of By-laws.

(iv.) To deal with proposed alterations of the by-laws of which three months' notice has been given.

Medical Politics and Ethics.

(v.) To consider any resolutions relating to the honour and interests of the medical profession which have been adopted by any division and submitted through the *Journal* to the consideration of all the divisions not less than three months previously.

The following clauses were then agreed to:—

Voting.

18. That in meetings other than representative meetings each person entitled to vote have one vote and no more.

Representative Meeting.

That in the representative meeting representatives of divisions only be entitled to vote. That in the latter case voting be, as a rule, by show of hands, but that if a majority of those present determine that a vote shall be taken by card then every representative shall record as many votes as there are members in the division or group of divisions which he represents. That in voting upon any matter upon which a constituency has passed a resolution within three months

Representative to Vote as Instructed.

immediately preceding such meeting the representative of that constituency be under obligation to vote in accordance with such resolution.

Chairman.

That the representative meeting, at the commencement of its annual session, elect a chairman for such session, who shall be an *ex-officio* member of the Council.

Quorum: General Business Meeting.

That no business be transacted in any general business meeting unless there be present 100 members, nor in any representative meeting unless there be present one-half the number of representatives appointed to attend such meeting.

Powers of General Business and Representative Meeting.

19. That a resolution of the annual general business meeting, or of the annual representative meeting, be regarded as the decision of the Association and be binding on the Council and on all subordinate bodies, providing that such resolutions if affecting the by-laws, the disposition of the funds of the Association, or the policy of the Association in matters concerning the honour or interests of the medical profession be affirmed by two-thirds of the votes given thereon; provided also that the Council, in any case where it is of opinion that such resolution does not properly represent the wishes of the Association, shall at any time within four months from the adoption thereof

Referendum at Instance of Council.

refer such resolution, accompanied by such observations as the Council may think desirable, to the consideration of special meetings of all the divisions, and that in that case the said resolution shall not be valid and binding, except to be approved by a majority of the members of the Association present and voting in the said special meetings of the divisions.

Annual Subscription: Grant to Branches.

20. That the annual subscription be uniform and inclusive, that the amount thereof be 25*s.* or such greater sum not exceeding 30*s.* as may be fixed by the Council, and that a capitation grant of 4*s.* per annum, for defraying the expenses of branches and divisions, be made from the general funds of the Association.

Subscriptions Due.

That the annual subscription be due on Jan. 1st in each year and be paid to the central office of the Association.

Privileges of Membership.

That each year's subscription entitle the member to receive the Journal of the Association for the current year, to the other privileges of membership of the Association, and to the ordinary privileges of membership of his branch and division.

Grant to Indian and Colonial Branches.

That the same proportion of each member's total annual subscription be allotted in the Indian and colonial branches and divisions for the expenses of local organisation, as in the United Kingdom.

Standing Committees.

21. That, subject to the articles of association and by-laws, the Council and the representative meeting have power to appoint committees with such powers as may be necessary or convenient, and to fix the quorum thereof, and lay down rules for regulating the proceedings of such committees.

Provided that there be standing committees as follows:—

(1) Journal and Finance.

(1) A Journal and Finance Committee to be appointed by the Council which shall *inter alia* examine into the general working of the office and of the *Journal* and certify the quarterly accounts prior to their being presented to the Council.

(2) Premises and Library.

(2) A Premises and Library Committee to be appointed by the Council, to which shall be referred all matters connected with the library and its management as well as the management of the house property of the Association.

(3) Public Health.

(3) A Public Health Committee to be appointed by the Council, to which shall specially be referred all questions relating to the public health service, the poor-law medical service, and the vaccination service.

(4) Colonial.

(4) A Colonial Committee to be appointed by the Council, which shall consider all questions specially relating to the colonial and foreign branches.

Such committee to include the representatives of these branches on the council.

(5) Naval and Military.

(5) A Naval and Military Committee to be appointed by the Council, to which shall be referred all matters relating to the Navy Medical Service, the Royal Army Medical Corps, the Indian Medical Service, and the medical organisation of the auxiliary forces.

Such committee to include the members of these services who are on the Council.

(6) Medico-Political.

(6) A Medico-Political Committee, which shall deal with all matters involving the public relations of the profession not specially referred to other committees, and shall consist of 15 members, eight of whom shall be appointed by the Council, and seven by the meeting of representatives.

Such committee to report to the Council and to the meeting of representatives, to act under the Council, and to have the services of a salaried officer.

(7) Ethical.

(7) An Ethical Committee, which shall advise the Council upon proposed by-laws of divisions and branches relating to professional conduct, shall investigate and report to the Council upon the cases of members whose conduct is to be considered by the Council, shall adjudicate in cases of disputes on ethical questions referred to it by members of the Association, and generally shall advise, and where so directed act for the Council on all questions of professional conduct.

Such committee to consist of not more than 12 members, half to be appointed by the Council and half by the meeting of representatives.

(8) Organisation.

(8) An Organisation Committee, which, subject to the directions of the Council, shall deal with all questions of the boundaries of branches and divisions, and the by-laws thereof other than those relating to ethical matters, and advise the Council thereon, and shall exercise such powers as may be conferred upon it by the Council in advising and assisting divisions or branches in the strengthening of their organisation.

Such committee to consist of not more than 18 members selected by the Council as representatives of the various districts of the Association and to have power to add to its number for special purposes a limited number of members specially qualified to assist in its work.

Committee Nos. 7 and 8 to have the services of a salaried officer, who may be the same as that of the Medico-Political Committee.

That the chairman of each Standing Committee be a member of Council. In the case of Committee No. 1 all the members to be members of the Council, but that in regard to other committees where not otherwise specified, such members to be non-members of the Council as the Council may from time to time determine.

That the first-class travelling expenses within the United Kingdom of all members attending meetings of committees be paid by the Association.

It is further recommended that in the event of the above scheme of reorganisation being adopted by the annual meeting the following special committees be appointed:

Drafting of New By-laws and Articles.

A. A committee, not exceeding 11 in number, to arrange for carrying the same into effect, by the preparation of the requisite articles and by-laws, such articles and by-laws to be forwarded to the Council for submission to the necessary statutory meetings.

Organisation Committee.

B. A committee, consisting of the secretaries of all branches, *ex-officio*, and of other members of the Association appointed by the Council, to confer with Branch Councils, or with such special committees as may be appointed by branches for this purpose as to the formation of divisions and the necessary changes in the boundaries of branches and to advise the Council as to the same.

Special Colonial Committee.

C. A committee to further consider the organisation of the Colonial and Indian branches and their relation to the Association, and to recommend such further changes in the regulations of the Association in reference to these matters as such committee may think desirable.

The following motions were put to the meeting, after having been duly proposed and seconded, and were declared by the CHAIRMAN to be carried:—

That it be an instruction to the committee appointed to draft the new articles and by-laws to consider the desirability of publishing the annual report before the election of the members of Council, and, if approved, to include the above suggestion in the new articles or by-laws;

Also, to consider the desirability of the President of Council taking the chair at all general business meetings, and, if approved, to include the above suggestion in the new articles or by-laws.

Dr. SARAT K. MULLICK moved:—

That having regard to the fact that persons possessing no knowledge of medicine are by law allowed the same rights to practise in India as fully-qualified practitioners, this Association considers it advisable that there should be a system of registration to protect the public from charlatans.

Dr. GROVES pointed out that registration throughout the Indian Empire presented political difficulties and considerations. Anything that was done in reference to India had to be done after much consultation with the people who have the interests of the natives of India most at heart. The authorities in India were unwilling to interfere with the rights of hereditary practice.

Surgeon-Major J. B. HAMILTON said that the carrying out of the motion would deprive an enormous number of natives of India of medical assistance. In that country the practice of medicine was an hereditary matter.

The motion was thereupon withdrawn and the proceedings terminated.

THE SECTIONS.

OBSTETRICS AND GYNÆCOLOGY.

THURSDAY, AUGUST 1ST.

Dr. WILLIAM DUNCAN (London) opened a discussion on

When and How to Operate for Fibroids.

He began by a reference to the question, Do fibroids endanger a woman's life? One writer had stated that the mortality of fibroids apart from operation was three cases in 2,160,112, adding that it seemed undeniable that deaths from fibroids apart from operation were excessively rare. Against this they had the opinion of another who quoted 18 cases reported by various medical men in which death was directly due to the condition. It was certain that fibroids might seriously affect the health of the patient, even apart from hæmorrhage. Thus a fatty heart was by no means uncommon; pregnancy often involved great risks, the mortality from various causes having been estimated at as much as 36 per cent., and resulting from miscarriage, rupture of the uterus, or other complications of labour; degeneration of vessels might also occur. On the other hand, there was no doubt that many cases gave no trouble and should be left alone; it was as wrong to say that all cases should be operated upon as to say that no operation should ever be done. The indications for operation were: (1) hæmorrhage; (2) pressure symptoms; (3) rapid increase in size; and (4) complication with pregnancy. In cases of hæmorrhage he advocated that in the first place dilatation should be done in order to remove any polypus that might be present; if the tumour turned out to be interstitial he thought that it was bad surgery to incise the capsule and to give ergot in the hope of expulsion, and he equally deprecated removal by morcellement. The advantage claimed for morcellement was that the uterus was left, but this was not always an advantage. Passing on to other measures, he considered that oöphorectomy had very properly fallen into disuse, since the mortality was not less than that of hysterectomy, it was not always effective, and it was more important to leave the ovaries than the uterus. With regard to Apostoli's treatment he had tried it in 10 cases and had found no benefit from it. Abdominal myomectomy was in many cases the ideal operation for fibroids; he did not, however, advocate it for multiple myomata. Hysterectomy was, then, the best treatment. The old extra-peritoneal operation with the serre-nœud he mentioned only to condemn. The choice of operation finally lay between retro-peritoneal hysterectomy and pan-hysterectomy, and of these he preferred the former as he did not see that pan-hysterectomy presented any special advantages. With regard to vaginal hysterectomy he thought that it had drawbacks and risks that were not compensated by advantages. He had now performed retro-peritoneal hysterectomy in 127 cases, with four deaths, there being no deaths in the last 81 cases. When pressure was the principal symptom the uterus could in some cases be pushed up and held up with a pessary; failing this, removal of the tumour was necessary. Rapid increase in size was generally due to degeneration and required the removal of the growth as soon as possible. The treatment of fibroids complicating pregnancy would depend on circumstances; some went through labour without trouble. In other cases interference was demanded by great pain during pregnancy, and the courses that were open to them were (1) the induction of abortion, (2) abdominal hysterectomy or myomectomy, and (3) waiting till

term with the view to the performance of Cæsarean section so as to save the child. With regard to the after-risks of hysterectomy, shock and heart-failure might often be averted by the administration of liquor strychniæ in three-minim doses three times a day for a week before and a week after the operation. With regard to operative details, he secured the ovarian and uterine vessels before cutting the peritoneal flaps, so that there was a minimum of hæmorrhage; he did not sew up the stump itself, but secured the peritoneum over it. The abdominal wall was closed in three layers. Convalescence was usually uneventful, especially when the ovaries had been left behind.

Dr. CUTHBERT LOCKYER (London) continued the discussion with a short paper on

A Case of Cystic Fibro-myoma in a Single Woman aged 23 years; Myomectomy; Recovery.

The patient had a tumour reaching nearly to the umbilicus and admitted the possibility of pregnancy, which the case somewhat resembled. The os was found widely dilated and a cystic swelling presented. The swelling proved to be a degenerating myoma undergoing spontaneous extrusion and was removed by morcellement; the lower and more solid part of the tumour weighed over two pounds; the upper portion was almost entirely cystic, containing over 30 ounces of yellow fluid. The patient made a satisfactory recovery.

Mr. ALBAN DORAN (London) laid down the dictum that operative success did not constitute justifiability for operation and held that brilliant operating might nevertheless be bad surgery. He agreed with the indications for operation mentioned by Dr. Duncan and endorsed his recommendation of strychnine. He had also found spartein very useful, especially in the case of middle-aged women with unhealthy kidneys. The Apostoli treatment was, in his opinion, much too empirical. Menorrhagia, if slight, was of no consequence; if more severe it could be checked by ergot; if worse still, it was best to do hysterectomy. Even the scientific basis of the Apostoli treatment had been called in question by electricians; and it had been pointed out that if molecular disintegration occurred, as was claimed, the woman would be either burnt up or blown up. With reference to the complication of fibroids with pregnancy, he pointed out that a fibroid at the fundus usually needed no interference; and he deprecated myomectomy during pregnancy as being bad surgery. Of the varieties of hysterectomy he preferred the retro-peritoneal. He laid great stress on having the stump and ligatures all covered over by peritoneum; this applied equally to the ovarian stump. He also strongly advocated the ligature of the uterine vessels under the peritoneum, without including the serous coat and a lot of tissue in the ligature. When in doubt as to the position of the vessels it was best to amputate the uterus and to secure the arteries as they spouted; it was better to see and to secure them than to poke about in the dark with a pedicle needle in the broad ligament, which had the result not infrequently of missing the arteries, whilst the needles, however blunt, usually damaged the veins.

Mr. CHRISTOPHER MARTIN (Birmingham) said that in considering operative indications the right course was a middle one. Among the indications requiring operation one that had not been mentioned by Dr. Duncan was sloughing. Further, he believed that sarcomatous degeneration of fibroids was a more common condition than some gynæcologists believed; he had personally seen seven cases in 12 years. As to particular operations, a submucous myoma should be removed, leaving the uterus; if large, myomectomy could usually be done in a woman who had borne children, but in nulliparæ it was both difficult and dangerous. There was a wide field for conservative abdominal myomectomy, except for multiple fibroids. In the main, hysterectomy was no doubt the proper treatment. There was much to be said in favour of both pan-hysterectomy and supra-vaginal amputation. He did not consider the former any more difficult than the latter, and it was indicated when the cervix was involved or was the seat of malignant disease. The advantages of supra-vaginal amputation were that there was no resulting communication with the vagina, though this was not necessarily a risk if proper cleansing of the vagina were carried out; it did not involve so much shortening of the vagina as occurred after pan-hysterectomy, there was less risk of wounding the bladder and ureters, less chance of adhesions of bowel to gauze packed in the vagina, and it was often a great point for the patient to feel that a part of her uterus was left, though it might be incapable of physiological functions. Vaginal hysterectomy was useful in some cases, but it was not indicated in cases of large tumours or where adhesions were present. His own results up to date were 47 abdominal hysterectomies (of which 40 were pan-hysterectomy), with one death; eight cases of abdominal hysterectomy for sarcoma, with two deaths; and 33 vaginal hysterectomies, with two deaths.

Mr. HAWKINS-AMBLER (Liverpool) said that heart disease was often an indication for operation, as Dr. Thomas Wilson of Birmingham had shown in a valuable paper read before the Obstetrical Society of London. He did not approve of myomectomy for multiple fibroids, for though it might give good results in the experienced hands of Dr. William Alexander in most cases the results were bad. He asked the experience of members as to the value of atropine for shock; personally he was disappointed in it. He had had good results from strychnine and also from the use of salines.

Dr. ALFRED SMITH (Dublin) agreed in the main with the indications laid down by Dr. Duncan, but thought that the mere size and bulk of the tumour justified operation in some cases—for instance, with servants and governesses who might otherwise be unable to obtain situations. His results up to the present were 101 cases of hysterectomy without a death. He laid great stress on the preparatory treatment of exsanguined and feeble patients. With them he not infrequently did a preliminary curetting to check bleeding and then kept the patient for some months on a course of iron and arsenic with a generous diet. In the prevention of shock it was most important to save mauling the intestines; for this purpose, after the tumour had been lifted out of the abdomen, he generally brought the abdominal walls together above it with a temporary suture.

Dr. JOHN CAMPBELL (Belfast) considered that dilatation with curetting required to be used with great discrimination; the operation was all right for small fibroids but in the case of large tumours with a tortuous uterine canal it was dangerous. With reference to the size of the flaps he had observed that in some of his cases there was an unsatisfactory condition of the pulse after operation and he was led to the conclusion that his flaps were too large and allowed of collections of fluid from which a kind of chronic poisoning resulted. He now made the flaps as small as possible.

Mrs. GARRETT ANDERSON (London) recalled the pre-operative period when fibroids were not interfered with. She had seen some of the risks resulting from leaving them alone. Three cases died from cerebral hæmorrhage; the patients were little over 50 years of age and presented nothing to account for the fatal ending except the previous losses of blood from fibroids. She had also seen cases of malignant degeneration of these tumours.

Mrs. SCHARLIEB (London) said that she did not at all believe in Apostoli's treatment; it usually led to peritonitis and the formation of adhesions. The indications for operation were theoretically clear, but there was often some difficulty in applying them to individual cases. Even when there was no hæmorrhage or pressure and in the case of women over 50 years of age degenerations might occur. One such patient whom she saw consulted one of the leaders of the profession who never operated himself or advised operation. He said that such a thing as operation was not to be considered and the next thing she heard was that the patient had died, without operation, from the sloughing of a myoma. She related several other cases of degenerations of myomata and remarked that the difficulty was to know which cases would undergo such degeneration and which would not. That these changes were common would admit of no doubt. In conclusion she related a case of myomectomy with conservation of the uterus and appendages in a girl, aged 15 years.

Mrs. STANLEY BOYD (London) endorsed Dr. Alfred Smith's statement that the mere size of a tumour was often sufficient reason for operating. Such a tumour was a deformity and apart from the disablement in obtaining situations referred to by Dr. Smith it might expose a woman to adverse criticism, which might have a very serious effect. In other departments of surgery the removal of deformities was allowed and why not in the case of myomata? The speaker had had good results from morcellement and also from vaginal hysterectomy in cases where the tumour was not larger than a four months' gestation. She advocated conservative myomectomy and pointed out that more information was wanted as to the course and results of labour after this operation.

Trendelenburg's position diminished shock by allowing the intestines to fall back out of the way of manipulation.

After some observations by Mr. BOWREMAN JESSETT (London)

Dr. AUST LAWRENCE (Bristol) remarked that before coming to the position of the obstetrician mentioned by Mrs. Scharlieb who never advised operation he would take down his door-plate. There was no doubt, however, that many women went about with fibroids without inconvenience. He agreed with the indications for operation laid down by Dr. Duncan. He had tried Apostoli's treatment in five cases and came to the conclusion that such benefit as accrued was received by the physician and not by the patient. With regard to the complications of pregnancy, he had had eight patients with fibroids whom he had attended in their confinement, and among them they were delivered of 17 children. An important thing was not to allow the uterine muscle to get over-tired; and half the cases were delivered with forceps. In some cases the tumour markedly diminished in size after labour. He held, therefore, that a fibroid tumour was not necessarily a barrier to marriage, and as long as the tumour presented no obstruction to delivery pregnancy might usually be allowed to go to term.

After some remarks by Dr. WARD COUSINS (Southsea) and the PRESIDENT (Professor J. W. BYERS), Dr. WILLIAM DUNCAN replied.

Dr. F. JAYLE (Paris) read a short communication on a New Gynæcological Position, which was a modification of Trendelenburg's position used for vaginal examinations and operations.

The three following papers were also read:

Dr. ALFRED SMITH (Dublin): A Successful Laparotomy for Abdominal Pregnancy with Removal of a Full-term Fœtus. Placenta and gestation sac *en masse*. The specimen was shown.

Mrs. STANLEY BOYD (London): A case of Twin Pregnancy, Extra-uterine and Intra-uterine.

Mr. HASTINGS GILFORD (Reading): Ovarian Pregnancy.

STATE MEDICINE.

THURSDAY, AUGUST 1ST.

A discussion was opened by Dr. A. C. HOUSTON (London) on

Enteric Fever in its Public Health Aspects.

He said that he was struck by three things: 1. That notwithstanding the progress of science and the greater efficiency of the public health service they found themselves at the beginning of a new century unable to stamp out a disease that was, nevertheless, still classed as a preventable one. All that could be said at the present time was that the mortality from it was less than it was some years ago. 2. That the knowledge, skill, and resourcefulness of the members of the Army Medical Service and their high devotion to duty had failed to prevent their troops in South Africa from suffering from enteric fever to a most deplorable extent. 3. That during the last few years some notable discoveries had been made in connexion with the bacteriology of enteric fever and fresh light had been thrown on the modes of dissemination of the disease. One of the most remarkable bacteriological discoveries of recent times was the "agglutination phenomenon" or "clumping reaction," terms applied to the now well-known fact that the blood of an enteric fever patient when mixed with an emulsion of living typhoid bacilli caused a specific reaction to take place; this showed itself in an embarrassment of motility followed by a clumping together of the bacilli. Dr. D. S. Davies used this test in tracing the epidemic of enteric fever at Bristol. Speaking generally no microbe other than the bacillus typhosus yielded the positive result described. There were exceptions, however. The serum of typhoid fever patients might react strongly to Gärtner's bacillus. The implicated Belfast water-supply that "clumped" strongly with the blood of enteric fever patients was found to contain "coli-like" microbes. The means for differentiating the bacillus typhosus from the bacillus coli had been extended; it was known that they were linked by intermediate forms. It was recognised that the typhoid bacillus was the cause of enteric fever, but as regards those other microbes there was no such knowledge. In the method of isolating the bacillus typhosus from sewage and water-supply much progress had not been made, but success had been arrived at in this respect abroad. It might be that the bacillus typhosus, existing saprophytically, differed morphologically and biologically from the bacillus typhosus after it had gained a foothold in the human organism. Dr. Houston then proceeded to deal with water, milk, and shellfish in relation to the dissemination of enteric fever. Water and milk had long been recognised as agents in disseminating enteric fever, but shellfish had lately been the subject of investigation. The bacillus typhosus might persist in sea-water for two or three weeks and in the interior of living oysters placed in sea-water artificially polluted with the bacillus typhosus for 18 days. The typhoid bacillus had been isolated from the body and liquor of an oyster derived from a suspicious source. The danger was not a constant one because although oysters were apt at one time or another to be brought into sustained relation with objectionable matters, the contamination was happily but seldom of specific sort. In regard to soil in its relation to typhoid fever the bacillus typhosus remained alive for long periods in sterilised cultivated soils, but sterilised virgin soils were inimical to its growth. It was held that in the deep layers of soil the conditions might be more favourable to the continued existence of the enteric fever bacillus. Flood water came under grave suspicion in the spread of enteric fever, because during storms it was not uncommon for the filtration of water to be inefficient. At the present time sanitarians took the view that the gases from sewers and cesspools, sewage, and polluted rivers were not usually bacterially objectionable but tended to depress the vitality of weakly persons and rendered them prone to "catch disease." It might be suspected that many of the cases of enteric fever traced to inhalation of impure ground air might have been due to drinking specifically contaminated articles, such as water and milk, &c. Laboratory experiments formed an unreliable index of what occurred in nature. The endemic prevalence of enteric fever in some localities with outbreaks without any apparent cause was difficult to explain unless it was assumed that the bacillus typhosus existed saprophytically in soil or in ground water. It had been shown that the bacillus could remain alive in various situations in the human body for months and years. The stools were only one of a series of agents by means of which the disease was spread, and the patient, after his seeming restoration to health, might carry about in himself the seeds of infection for months and years. It was suspected that the danger of flies and insects and vermin conveying contagion was a real one. Until positive evidence was forthcoming to the contrary it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than crude sewage. The attention that had been directed to typhoid bacilluria had thrown light on the spread and persistence of the disease. Dr. Houston then discussed fully the danger of infection from fried fish and gave details of an outbreak of enteric fever where the fried fish purchased from a particular shop seemed to have had a nearly universal attraction for the persons attacked by the disease. The distribution of affected houses showed a grouping about this shop as a centre, and in some families it was the fried-fish eaters who were attacked. In an outbreak ascribed by some to fried fish the disease was said by one observer to have been spread by infected mangles. Certainly that medium of infection had hitherto escaped recognition. Dr. Houston concluded with some remarks on prophylaxis. He considered that the preventive inoculation with Wright's vaccine was most serviceable for persons going abroad. It had been clearly demonstrated that urotropine was an almost specific remedy in cases of typhoid bacilluria, and Dr. Houston digressed at this point to state emphatically that the potentialities for evil of a typhoid fever convalescent suffering from typhoid bacilluria were so great as to be almost inconceivable. No one doubted that efficient sand filtration was a great safeguard, but there was no reliable evidence to show that it did more than greatly lessen the danger. The general measures which had governed sanitarians in the past remained the same to-day—viz., protection of water-supplies from excremental pollution, securing all articles of food from objectionable communication, keeping the drains and sewers in good order, and disinfecting the stools and urine of patients suffering from enteric fever. The recognition of the dangerous affection known as typhoid bacilluria must have a most important influence in controlling the spread of the disease.

Dr. F. A. DIXEY (Oxford) read a paper on the

Vital Statistics of Enteric Fever.

His conclusions were that the death-rate from enteric fever in London was a fluctuating one, but had on the whole

materially diminished, the most marked descent having occurred about 16 years ago. The seasonal relations of enteric fever remained fairly constant from year to year, but there seemed to be a tendency, at least in years of low general prevalence, towards a progressive flattening of the autumnal maximum. A comparison between London and New York in respect of climate and enteric fever death-rate indicated that some meteorological conditions, especially perhaps temperature, were factors in the activity of the enteric infection. The relation, however, was not of such a kind as to make itself apparent from year to year in one given locality. It was probable that the diminution in the death-rate of enteric fever was really somewhat greater than it appeared to be from the inclusion in former times of enteric fever cases under other heads, notably typhus fever and simple continued fever. This source of error, however, was never very important and it was practically non-existent. The case-mortality of enteric fever was almost stationary and seemed likely for the present to remain so.

Dr. W. G. SAVAGE (Cardiff) said that there was too great a tendency to accept the opinion of the bacteriologist as final.

Dr. H. HANDFORD (Nottingham) addressed the meeting on the importance of direct infection in this disease and protested against the routine use of large doses of urotropine.

A communication from Dr. E. M. SMITH (York) was read in which he referred to the ease with which infection could be carried by flies from the open middens used in York.

Dr. A. R. REYNOLDS (Chicago) said that Chicago was supplied with water from Lake Michigan by four tunnels and it had been observed that the mortality from typhoid fever and from acute intestinal diseases followed each pollution of the supply, the first in about five weeks and the second in about one week. In January, 1900, the sanitary waterway was opened that carried the city sewage into the Mississippi valley, thereby reducing the mortality from typhoid fever. The Chicago departmental laboratory supplied physicians with its services entirely free in making diagnoses by the Widal test.

Dr. A. K. CHALMERS (Glasgow) discussed the seasonal curves of enteric fever in Glasgow. These were two points of increasing prevalence, one in the autumn and the other in the spring. In a winter of severe frost some years ago no spring increase followed.

Dr. J. GROVES (Carisbrooke) considered that there was expected from the bacteriologist that which was altogether beyond his power. He gave the history of an outbreak of enteric fever due to a supply of chalk water. The local authorities were lulled to a feeling of security by the bacteriologists and chemists declaring the water to be excellent, containing no organic impurity and with less than 150 innocent micro-organisms to the cubic centimetre. The problem was cleared up by means of "spot maps" at great expense to all concerned.

Dr. F. T. BOND (Gloucester) stated that he had not observed any special liability to enteric fever in the colliery districts under his care. He had not come across a single case of infected milk causing enteric fever during 28 years.

Mr. J. A. WANKLYN said that water free from organisms but charged with organic matter was a highly dangerous water because it was a culture medium.

Mr. HERBERT JONES (Hereford) said that after the introduction of "water-carriage" typhoid fever decreased in the Rhondda valleys.

Mr. W. C. C. PAKES (London) detailed a useful test for differentiating the bacillus coli from the bacillus typhosus by means of a sodium formate medium.

Dr. J. M. MARTIN (Stroud) propounded the question whether local authorities ought to sterilise their chemically pure effluent or whether the bodies who drew on river water should purify it.

Mr. G. H. FOSBROKE (Worcester) cited cases of enteric fever in which the infection was carried 12 miles by water. He had concluded in certain outbreaks that the disease arose from polluted soil.

Dr. HOUSTON, in reply, said that sanitary authorities did not sufficiently recognise the difficulties of the bacteriologist. Sputum was not usually credited with special infective capabilities but should be viewed with suspicion. He did not agree that urotropine should not be administered; to withhold it in some cases was to encourage the spread of enteric fever. The exceptions to the utility of Widal's test were not sufficient to detract from the value of the test. In the failure to diagnose contamination of water described by Dr. Groves it was difficult to understand the mistake. In regard to Mr. Wanklyn's views he urged that the bacteriologist could detect minute excremental pollution outside the reach of chemical analysis. He recognised the value of Mr. Pakes's test with sodium formate medium and would try it in the future.

PSYCHOLOGICAL MEDICINE.

THURSDAY, AUGUST 1ST.

Dr. ROBERT JONES (Claybury Asylum) opened a discussion on

Puerperal Insanity.

After referring briefly to the importance of reproduction and to the nervous basis of the reproductive emotions he stated that gestation was attended with much nervous disturbance in many women and with some nervous disturbance in all women. Insanity actually occurred but once in every 700 confinements. The reports of the Commissioners in Lunacy for the years 1894–98 inclusive showed that 8·4 of women admitted to asylums in the pauper class and 7·2 in the "private" class were subjects of insanity due to the puerperal state or to pregnancy or lactation. The statistics of Claybury Asylum for 1900 corresponded very closely with these figures, and Dr. J. Warnock of the Cairo Asylum gave similar figures for Egyptian women. Taking the total of 3500 female patients admitted to Claybury Asylum during the past eight years, exclusive of transfers from other asylums, it appeared that 259 were cases of insanity of pregnancy, the puerperium, or lactation, distributed as follows: 56 were cases of insanity of pregnancy; 120 were cases of puerperal insanity in the stricter sense—i.e., occurring within six weeks of confinement; and 83 were of later development and associated with lactation. It was suggested that no particular type of insanity was associated with pregnancy or lactation, but the insanity of the puerperium was different in that it presented a marked delirium with wildness and delusions of a hallucinatory character in which religious and erotic manifestations were prominent, so that an almost distinct nosological entity might be recognised, a view, however, which he confessed was not supported by high authorities. As to illegitimacy, it appeared that 12 per cent. of the 259 cases from the records of Claybury Asylum were single women and that the outbreak of insanity was twice as frequent during pregnancy in these cases as in the puerperium. The incidence of illegitimacy in the general population varied greatly, being low in Middlesex and Essex, high in Cumberland, and probably higher still in Scotland. Of the married women who had had a first attack no less than one-third had subsequent attacks in their second (or later) confinements. One patient had had 12 attacks of insanity with as many confinements and another had nine. Both cases terminated in chronic and incurable dementia at the menopause. Of the puerperal cases more suffered from mania than from melancholia. Of 120 puerperal cases one only was epileptic. Of the 83 lactational cases a greater proportion suffered from melancholia or depression than from exaltation. The onset in the puerperal cases was generally sudden and maniacal; in fact, the sooner the outbreak of insanity followed confinement the more acute were the symptoms. The almost unanimous early symptom of puerperal insanity was insomnia followed by a feverish and anxious restlessness. Suspiciousness, loss of appetite, and a proneness to delirious excitement followed. The symptoms of puerperal mania occurred within the first two weeks of confinement in 40 per cent. of cases and 18 per cent. more occurred during the third week. It was important to pay early attention to sleeplessness and headache in puerperal women. Suicidal promptings were present in 21 per cent. of the puerperal cases, increasing to 47 per cent. among lactational cases. In one case the conversation of the nurse that infants were occasionally removed piecemeal acted as the apparent exciting cause of puerperal insanity in a nervous and susceptible woman. One predisposed woman hearing of the confinement of the Princess May developed the delusion that she was the princess. It was probably that both bodily conditions, such as septicæmia, exhaustion, and the like, cooperated with mental strain and anxiety in producing puerperal insanity. The puerperal woman should be protected from both classes of exciting causes. In puerperal insanity the woman usually suffered from delusions concerning the identity of those near her and even failed to recognise her own identity or that of her infant. She developed marked antagonism to her husband and displayed both eroticism

and indecency—a habit which shocked and alarmed her friends and relatives. A glaring wild look characterised this stage, the skin was pale and sallow, and repeated yawning indicated clearly a marked degree of exhaustion. Of 120 puerperal cases 88 were first attacks. One insane woman discharged from Claybury Asylum was admitted afterwards to another institution with puerperal insanity. She subsequently bore seven children, five of whom became insane. In was questionable whether hysteria in early life increased the possibility of a mental breakdown in the puerperium, for it must be remembered that to many girls marriage fulfilled a natural expectation and it thus might lessen the liability of mental breakdown at the climacteric which the single state predisposed to. With reference to heredity it was found that 122 out of the 259 cases referred to in this paper had some hereditary predisposition to mental or physical breakdown, including both direct and collateral taints of insanity, epilepsy, suicide, alcoholism, and phthisis. Home treatment should be adopted in cases where means permitted, the infant's and husband's presence being avoided, as these frequently tended to produce infanticidal impulse or eroticism. The prognosis as to recovery was good for first attacks, but after second or subsequent attacks, or when puerperal insanity appeared after confinements late in life, the prognosis was bad and the insanity was apt to persist and to become chronic. Many cases of acute puerperal mania tended to pass into acute dementia, and, contrary to Clouston's and Savage's, experience at Claybury Asylum had shown that numerous and frequent relapses were more common in these cases than was generally believed. Special watchfulness was necessary in cases of lactational insanity to guard against the patient's lapsing into a low state of nutrition with tendencies to gangrene or pulmonary phthisis. Albuminuria was not common in puerperal insanity and when it occurred the prognosis was grave. Of the recoveries from puerperal insanity nearly half occurred before the expiration of four months from the outbreak. The death-rate was highest in the insanity of pregnancy and lowest in puerperal insanity. With regard to pathology it was suggested that a slight toxæmia of the mother's blood was produced by waste products excreted from the fœtus; some observers called this a state of anæmia owing to a diminution of the red corpuscles in the maternal blood, while others had drawn attention to peptonuria and an increase in the toxicity of the pregnant woman's urine. After confinement the morbid and effete material which was taken into the maternal circulation during early uterine involution tended to produce, in those predisposed, an irritation of the nervous system, especially if the secretory and excretory functions were in any way impaired or inefficient. At this period saprophytic bacilli gained entrance to the blood and septi-cæmia and pyæmia rapidly developed. The tongue then got foul, dry and coated, sordes formed on the lips and teeth, the skin was dry and hot, and the urine was scanty and concentrated. Obstinate constipation might be present. In cases where there was no fever but where an acute delirium occurred lasting for several days it was possible that some unknown poison in the blood acted on the brain in a manner like unto alcohol. As regards treatment the dictum of Gooch, that no medicinal agents could relieve a disordered mind except indirectly through the disorder of the body with which it was associated, had to be borne in mind. These causes had to be ascertained and treatment directed to them. Cases of the insanity of pregnancy required constant vigilance to prevent suicide. The patient was suitable for asylum treatment or where means permitted she might be treated at home. The general treatment was a light dietary, bright surroundings, regulation of the bowels by saline aperients, and sleep, the latter being secured by the aid of chloral and bromides in combination. Complications which might arise, such as eclampsia, must be dealt with after the methods of obstetric science. Insanity occurring after the puerperium needed more special treatment, and it would be well to make it a rule in all cases occurring within six weeks of parturition to treat the patient at home. The special dangers of infanticide and suicide should be guarded against and the avoidance of the stigma of asylum treatment would be an intense relief to the mother who during her convales-cence would think she had only suffered from "fever" and not from insanity. The essence of general treatment might be summed up in generous diet, liquid and easily assimilable, administered by the stomach tube if neces-sary. Food should be given during every quiet in-terval, as exhaustion was a marked feature. Eggs, beef-tea, milk, malt liquors and malt extract, and cod-liver oil might be given to the patient, while the bowels should be kept regularly and freely open with calomel, jalap, podophyllin, or croton oil. Sleep must be secured, and for this purpose sulphonal, paraldehyde, and the combination of chloral and bromides were the best therapeutic agents in his experience. Opium and morphia were unsuitable owing to the stimulating effect on the brain and the arrest of secretions produced by these drugs. The anæmia should be combated by the use of iron, strychnine, and digitalis. A return of the menses might be regarded as the forerunner of mental improvement. A condition of semi-stupor might mark the stage of convalescence, and at this stage the patient's mind should be roused and diverted by change of scene and bright surroundings. In all puerperal cases vaginal douches might be given with solutions of boric acid, permanganate of potash, or carbolic acid. Where a portion of membrane or clot was retained in utero dilatation of the cervix and curetting of the endometrium were recom-mended. What had been said about tonics, diet, and fresh air applied with greater force to the treatment of lactational insanity. Stimulants should be administered with great caution, as the alcoholic habit might be contracted and continued after recovery had set in.

In the discussion following the above paper,

The PRESIDENT (Dr. J. B. SPENCE of Lichfield), after thank-ing Dr. Jones, stated that though agreeing in the main with the paper he must disagree with the remark that puerperal cases that break down early after confinement should be treated, if possible, at home for a period of at least six weeks. From a long experience of such cases he was con-vinced that the earlier the cases of puerperal insanity came into an asylum the better were the prospects of recovery for the patient.

Mr. JOSIAH OLDFIELD (London) spoke at some length on the medico-legal aspects of infanticide by a woman recently confined, and argued that evidence pointed to the fact that the stresses of pregnancy were responsible for a considerable percentage of mental disturbances in women. In such cases the woman recently delivered of a child was wholly or in part irresponsible for her actions. It was their duty to teach jurors and the public the doctrine that in such cases of infanticide where a woman broke through the strongest ties and instincts that bound her to her offspring (the protective instinct of motherhood), and attempted to destroy the life of her infant, this in itself should be looked upon as *prima facie* evidence of her irresponsibility, and that therefore the onus of proof of sanity and responsi-bility should fall upon the prosecution and not its disproof upon the defence.

Dr. JAMES G. SOUTAR (Gloucester) said that in the district where his practice lay, and amongst the well-to-do, puerperal insanity was not a common disorder. Out of the 500 female admissions during recent years at Barnwood House, Gloucester, only 10 were cases of puerperal insanity, and the striking fact in regard to them was that those who had been admitted within four weeks of the onset of the attack made the best recovery.

Dr. W. LLOYD ANDRIEZEN (London) referred to the moral factor predisposing to insanity in cases of illegitimate births, puerperal insanity being twice as common (or, according to Dr. Jones, four times as common) after illegitimate as com-pared with legitimate births. He referred to the problem of racial predisposition and instanced the Jewish race in the United States, Russia, and Austria, where, according to recent observers, puerperal insanity was twice as prevalent amongst Jewesses as compared with the native population. A special neuropathic predisposition also existed in some women, for of two pregnant women going through the stresses of parturition and the puerperium under similar conditions the one might develop an acute delirium with hallucinatory excite-ment lasting for weeks—in other words, acute mental con-fusion—whereas the other passed through a little restlessness and irritability with a mild pyrexia, lasting two or three days and leaving no bad after-effects. Such a fact, of every-day experience, showed that a fundamental difference existed. From an etiological point of view he recognised two distinct groups of the puerperal psychoses. In the first group the causes were septicæmia with or without auto-intoxication acting on a basis of cerebral exhaustion; in the second group a psychopathic predisposition existed and but slight stresses were required to excite mental confusion and delirium. In the classification of the puerperal insanities the first place should be given to acute mental confusion; this was

the fundamental clinical condition and it was allied to the "hallucinatory delirium" of Mendel and was recognised by Kraepelin and the French school as a nosological entity. A description was given of the microscopic pathological changes found in the brain in a fatal case—viz., extensive destruction and "dusty" chromatolysis of all the layers of nerve-cells in the cerebral cortex, especially the large pyramidal cells, and a peculiar brownish pigmentary degeneration throughout many of the cells and the small amount of perivascular changes in the brain. It was claimed that puerperal insanity had decreased during the past three decades in large towns, and reference was made to the sanitary records of Boston and Philadelphia, where the ratio of puerperal insanity to total labour cases had fallen steadily since 1880, the date when antiseptic measures were adopted widely and generally in obstetric practice. It was therefore evident that the development of aseptic treatment in parturition and the puerperium was an important practice in the prevention of some forms of puerperal insanity. The limitation in the production of neuropathic girls, by forbidding the marriages of those afflicted with taints of insanity, epilepsy, and the like, was another means of prevention, but the advice of the mental physician, though solicited, was seldom followed and it would take many years to educate public opinion, though it was their duty as alienists to do all they could in this direction.

Dr. S. J. COLE (Colney Hatch) corroborated Dr. Jones as regards the somewhat increased prevalence of puerperal insanity among the private classes, the strains of parturition being felt more among cultured women than in the poorer classes. He emphasised the neuropathic taint as playing a rôle of perhaps greater importance than septicæmia and toxæmia, but was of opinion that the causation was compound as in the other insanities.

Dr. FLETCHER BEACH (London) stated that the marriage of neurotic persons was on the whole to be discouraged, especially when epilepsy or insanity was present. With regard to the milder neuroses, however, he would not absolutely prohibit marriage because children with exceptional abilities and brilliance were sometimes the offspring of slightly neurotic fathers or mothers. He also dwelt upon the importance of diet in puerperal cases, as in epileptics.

Dr. HARRY CAMPBELL (London) pointed out that in order to maintain a high level of racial health it was necessary that those who fell below the standard of health should abstain from marrying and propagating their kind. The view of sanitarians that it was merely needful to this end to secure hygienic conditions was a dream. He thought it was an accepted belief that any woman who had been insane after childbirth should be prevented from conceiving again and pointed out that the so-called "mental" causes of insanity operated essentially by deranging the functions of the body, and that certain emotions, such as fright, gave rise to profound bodily changes even in animals. The toxic factor was an important one in determining insanity, both in pregnancy and in the puerperium, because the nutrition of the body was at these times in a state different to that at other times.

Dr. J. HADDON (Hawick) said that no microbe could grow without a suitable soil, just as clover could not grow in certain fields unless the right manure was put in. So it was in the human body, and he believed that over-eating was one of the conditions which formed the nidus for such microbes. A restricted diet cured some cases of epilepsy—a disease closely allied to insanity—and it might be that a greatly restricted diet would be helpful in diminishing the predisposition to insanity, including puerperal insanity of microbic origin.

Dr. SAMUEL GRIFFITH (Portmadoc) said that in his long experience as a general practitioner he had noted that the patients suffering from puerperal insanity were either asthenic with strong hereditary taint or rendered asthenic with difficult and instrumental labours. He looked upon puerperal insanity as being septicæmic or hereditary. He believed in the home treatment of such cases, the asylum being made use of when the former failed. Many cases would get well with good feeding, strict cleanliness, and rest for both body and mind.

Dr. EDWIN PASMORE (Banstead Asylum) said that there was a disease which could be properly termed puerperal mania, characterised by an attack of excitement during the puerperal state, febrile temperature, hallucinations of sight, and delusions of identity. The group of symptoms seemed to him to be of such a nature as to point to a toxæmia with characteristic clinical features, and he believed it was hereditary. He had faith in the efficacy of opium in puerperal mania, and to secure proper effect the drug should be given in large doses up to 20 or 30 minims.

Dr. ROBERT JONES, in replying at some length, appreciated the value of the medico-legal criticisms of Mr. Oldfield and believed that legal experience had borne out the view that there might be changes in women during pregnancy, parturition, and the puerperal state amounting to mental alienation, a point which could not be disregarded in cases of infanticide following labour. He was impressed with the great necessity of kindness, patience, and tolerance in treating puerperal cases. His experience as regards puerperal cases with marked melancholia was that recovery was delayed in such cases. His experience of private cases agreed with that of Dr. Soutar as regards the rate of recoverability. The remarks of Dr. Andriezen on the moral factor and on illegitimacy deserved serious attention, and he entirely agreed with those remarks. The same applied to the observations cited of the diminished incidence of puerperal insanity since the introduction of antiseptic methods. As to the distribution of puerperal insanity among the Jews his impression was that in England they probably kept their women at home when suffering from puerperal insanity either until recovery or until the case became chronic. He quite agreed that acute mental confusion of a hallucinatory and delirious character was the common feature in puerperal insanity, but this had not been recognised by authorities in this country as a nosological entity. He could supplement the pathological findings of Dr. Andriezen by referring to a similar case described by Dr. van Giessen of New York who found similar changes in the Nissl's granules and pigmentary changes in the nerve-cells in acute delirium. Dr. Harry Campbell's interesting observations were welcome from the philosophical standpoint—viz., the prevention of insanity by forbidding the marriage of neurotic persons. This was a counsel of perfection thankfully received and promptly disregarded by candidates for matrimony. In certain States of North America such marriages were recently forbidden by law. He agreed with Dr. Campbell as to the results of the emotion of fear in producing bodily disturbances. To the remarks of Dr. Fletcher Beach as regards the marriage of neurotic persons the same remarks he had just made applied. He agreed with Dr. Cole that mental shock was more felt in the educated classes and would thus go further to produce puerperal mania, which might in such cases be very distinctly of neurotic origin. In reply to Dr. Pasmore he stated that both temperature and pulse had a marked bearing upon prognosis, but that a febrile temperature was comparatively infrequent in some marked cases of acute puerperal mania. As to heredity, the result of inquiries showed that maternal heredity was met with twice as frequently as paternal heredity in the puerperal and lactational cases. The President's remarks as to early treatment in asylums deserved great respect, especially for pauper cases, but in the case of the well-to-do the stigma of having been in an asylum was keenly felt and if possible this should be avoided by home treatment.

Dr. F. W. EDRIDGE-GREEN (Hendon) contributed a paper dealing with the

Evolution of a Perceptive Centre.

By a perceptive centre was meant the portion of brain having the function of conveying to the mind information concerning a sensation. They knew that nerve impulses differed in accordance with the character of the physical stimuli giving rise to them, and the theory he would put forward was that those physical stimuli which differed most were first recognised by man as different. In illustration of this the evolution of the colour sense was discussed. All the facts which could be gained from the study of the words used for colours in ancient literature (e.g., Greek), and the examination of beads and coloured fabrics from savages and primitive races of man, showed that the sense of light was developed first and the sense of colour afterwards. Those colours which differed most materially in their physical aspects—i.e., wave-lengths—were the first to be perceived as different—viz., red and violet. As the cerebral visual centre developed in man the capacity for recognising other colours would be superadded, so that early man passed through the various stages of colour-blindness, the capacity for colour-perception in its present form being very slowly developed. The rainbow in the sky appeared to primitive man first

as a bright grey in the middle with a tinge of violet at one border and a tinge of red at the other. This would correspond to that degree of colour-blindness met with occasionally and which preceded total colour-blindess. The recognition of green was a later development in the colour-sense, and as evolution proceeded a fourth colour, yellow, was recognised at the junction of the red and green. He had never met any person who was able to see more than seven different colours in the spectrum. The same theory of evolution applied to the other perceptive centres, such as the perception of pitch by the ear.

In the discussion following the above communication

Dr. LLOYD ANDRIEZEN stated that various observers could distinguish according to their capacity from four to seven colours in the spectrum. He was himself able to discriminate red, orange, yellow, green, and greenish-blue, blue in the strict sense, violet, and the lavender-grey ultra-violet. The infant at first differentiated luminosity from darkness, and from a limited number of observations he believed that blue was first appreciated by the child and red soon afterwards. The perception of green was a later development. From experiments he thought that probably the yellow-green region—the region of maximum luminosity in the spectrum—was the last to be discriminated by man in the evolution of his colour-sense because the purely luminous effect was here at its maximum and therefore would obscure fine differentiation. The evolution of every sensory centre (visual, auditory, or cutaneous) took place in coöperation with its special kinæsthetic auxiliary centre and he thought that exercise of the latter would help in the development of the former. He inquired if cases were observed of the order of dissolution of the colour sense.

Dr. ROBERT JONES said that in some languages such as Welsh the same word was used to designate both blue and green. The grass was blue (Welsh "glas") in Welsh, an indication that blue was the colour first recognised by the primitive Welsh, who at a later stage in the development of their colour-sense extended the application of the term to the nearest colour allied to blue—viz., green. He had dressed his two children in coloured dresses and concluded that they preferred blue overalls. The occurrence of Daltonism was an instance of defective development of the colour-sense, a reversal to an ancestral type of evolution. He agreed with Dr. Andriezen as to the great part played by "motor" sense in the evolution of the special senses, and he believed that its growth could be best studied in children, which must prove an interesting as well as necessary study.

Dr. EDRIDGE-GREEN, in reply to questions, said that he found the order of development of the colour-sense in children to be as follows: first red and violet, then green, then yellow, and lastly blue. In Greek and many other languages besides Welsh there was but one word for both "blue" and "green." The confusion of green and blue was a very common form of colour-blindness. He had noted in a case of general paralysis that the order of dissolution of the colour-sense was the reverse of the order of evolution; and with reference to heredity he mentioned a family of nine persons—one an artist and eight musicians—all of whom were colour-blind.

Dr. JOHN TURNER (Essex County Asylum) contributed a paper on

The Physical Basis of Melancholia.

In melancholia changes were met with in the pyramidal and giant nerve-cells of the brain which were apparently identical with those produced in the motor bulbo-spinal nuclei (hypoglossal and lumbar) of animals by severance of the motor nerves. When such changes were marked dementia was present. Alcohol and traumatism were also capable of setting up similar changes in the nerve-cells. Many years ago Dr. Wiglesworth of Rainhill Asylum described changes in the cerebral nerve-cells in melancholia, and recently Dr. Adolf Meyer had published several cases with descriptions of the pathological changes in the cells. In cases of rapid dementia of alcoholic origin the changes were present in a more marked degree. Dr. Turner then gave the clinical histories of cases of melancholia in which at the necropsies the brain cells showed pathological changes which he tabulated as follows:—1. Cerebral cortical cells. These showed swellings of the cell bodies, displacement of the nucleus to the periphery of the cell, and chromatolytic changes (disintegration) in the central part of the cell body so that this part appeared pale, blurred, and "washed out" in appearance, while the peripheral part was still full of darkly-staining chromatic bodies. These observations referred to the giant and large pyramidal cells. The changes affected all parts of the cortex examined, but were more clearly marked and affected a larger proportion of cells in the ascending frontal convolutions. The very large pyramidal cells met with in the occipital lobe were almost always similarly implicated. The cells of the hypoglossal nuclei were normal, but the cells in the vagus, lateral, ambiguous, and cuneate and gracile nuclei presented changes similar to those of the cortical nerve-cells. In the spinal cord the changes were slight or absent in the cells of the anterior cornua at various levels. No degeneration of the tracts in the spinal cord could be found with Marchi's method in seven cases examined. The tangential fibres of the cerebral cortex in six cases studied after staining with osmic acid appeared to be almost normal, there being a slight diminution in the numbers of the finer medullated fibres only. The fact that the cells of the hypoglossal nuclei were not affected in any of the cases and the anterior corneal cells only in advanced cases showed that the disease was not uniform throughout the nervous system. Dr. Turner claimed that the changes in melancholia began in the afferent part of the nervous system, beginning in the sensory roots and posterior spinal ganglia of the spinal nerves, so that the cells within the spinal cord—for example, in Clarke's column—were deprived of their natural sensory stimuli. The same condition applied to the sensory pathway proceeding upwards to the cerebrum, the cells of the cuneate and gracile nuclei being affected and the sensory tracts to the brain thus damaged. Thus was explained also the general and partial anæsthesias of the surface of the body in advanced melancholia, as was pointed out long ago by Griesinger. Bevan Lewis regarded the essence of mental pain as "pent up activity" and stated that all grades of mental pain were dependent on over-action of the impressive (or afferent) and restricted action of the expressive (or efferent) region, but this view of over-action must be regarded as doubtful in face of the admitted frequency of anæsthesia in melancholia. Apparently, according to Bevan Lewis, the barrier was in the efferent region, whereas the above observations showed that any barrier which might exist was on the afferent pathways. Moreover, the theory that melancholic states depended upon a slighter reduction in the highest nervous centres than maniacal states did not satisfactorily meet the facts of the case, and although undoubtedly most mental affections began with depression, yet they were by no means less grave than maniacal conditions. In Dr. Turner's experience melancholia more frequently than any other class of mental disorders, with the exception of general paralysis, tended in comparatively short periods to pass into dementia, and this passage often showed no intervening phase of mania as they should expect if the assumption just referred to were correct.

Dr. SEYMOUR TUKE (London) read a paper on

The Modern Treatment of the Insane,

referring to the difficulties under which alienists laboured under the existing lunacy laws. He thought that legislators had framed the laws in question in a spirit mainly of suspicion towards physicians engaged in lunacy practice or interested in private asylums and licensed houses. The Lunacy Act of 1890 was, owing to its "too repressive" nature, evaded by many, and unregistered places for the accommodation of insane private patients thus continued to exist. Then a prevailing practice existed of diagnosing cases of insanity as neurasthenia, hysteria, and as "borderland" cases, and the borderland was regarded as so elastic that it was made to include cases of insanity which in his opinion should be sent to asylums.

In the discussion which followed Mr. J. STEWART (Clifton, Gloucestershire) said his own experience confirmed the observations of Dr. Tuke, and he felt it was regrettable that owing to the abuse of the law by a class of practitioners who were not alienists the latter should have in large measure come to share the blame.

PATHOLOGY AND BACTERIOLOGY.

THURSDAY, AUGUST 1ST.

Mr. ALEXANDER G. R. FOULERTON (London), in introducing a discussion on

The Pathology of Pneumococcic Infection,

said that the pathology of pneumococcic infection was concerned with a large number of cases of diseases which in

their clinical aspect might have but little in common and in their morbid anatomy might vary as widely. The specific organism of this infection, the pneumococcus, micrococcus pneumoniæ, or diplococcus lanceolatus, belonged to the class of strict parasites, so far as our present knowledge went. Further, it appeared as infecting man alone and had never yet been found as a parasite of the lower animals. It had been but rarely met with outside the human body, but Emmerich had succeeded in isolating it from the dust of the floor of a ward in which there were patients with pneumonia, and Uffelman claimed to have isolated it from the air of a cellar. From what was known of its biology it was improbable that the pneumococcus as it was found as a parasite of man could maintain a separate existence as a saprophyte and away from a living host for any length of time. Micrococcus pneumoniæ was a fairly common parasite of the mucous membranes in man and not necessarily under pathogenic conditions. It was first discovered accidentally by Pasteur, Chamberland, and Roux on inoculating rabbits with the saliva of a child who had died from hydrophobia, and at about the same time by Sternberg on inoculating some rabbits with healthy saliva, and both accounts of the organism were published almost simultaneously in 1881. Subsequent investigations had shown the frequency with which the organism existed in the mouths of healthy individuals, in whom Sternberg found it in 20 per cent. of all cases examined, and Netter in about 15 per cent. The organism was also found in the anterior nares, von Besser isolating it from the nasal secretion of 14 out of 57 individuals examined. Arnold Lawson, when investigating the bacteriology of the conjunctival sac in 200 healthy individuals, found micrococcus pneumoniæ present in two, and in each in pure culture. The parasite had also been found on the mucous membrane of the vagina, but it was probably rarely present there, since Doyen was the only one of the large number of those who had worked at the bacteriology of this canal who had isolated it from the vaginal secretion.

The virulence of the parasite from healthy individuals and when existing under pathogenic conditions.—The first point that had to be considered in studying the pathology of pneumococcic infection was whether the organism as it existed as a parasite of healthy individuals was endued with virulence in the same degree as when it was found as an actively pathogenic agent. Evidence on this matter could only be obtained by animal experiment. Micrococcus pneumoniæ, although not found occurring naturally in the lower animals, was actively pathogenic for many of them—the rabbit, wild and tame mice, wild and tame rats, the guinea-pig, the sheep, and the dog being all more or less susceptible to infection. The susceptibility was most marked in the rabbit, least in the dog, and in the other species according to their position on the list. Pigeons and poultry were, according to Washbourn, immune against this infection. And in testing the organism as obtained from healthy saliva its virulence for the rabbit would usually be found to be quite as evident as when isolated from, for instance, the sputum of a case of pneumonia. When, therefore, the parasite became pathogenic for its human host there was no reason to believe that infection had happened because of any sudden access of virulence to a previously harmless parasite, but rather that the condition of the host had afforded opportunity which, under the conditions of ordinary good health, had been wanting for the exercise of a natural pathogenic virulence. Netter, however, when studying the organism as it occurred in the sputum of cases of pneumonia, found that it lost all its virulence during the fortnight immediately succeeding defervescence but regained it at the end of that time. Testing the cultures immediately after isolation from cases of recent infection in man Mr. Foulerton had found that the degree of virulence in a series of cases, including the organisms isolated from 11 cases of empyema in children, one case of empyema in an adult, from two cases of meningitis, from three of pneumonia, from one of cellulitis, and from one case of a circumscribed abscess of the finger, was fairly uniform for the rabbit. So far as man, its natural host, was concerned, micrococcus pneumoniæ in its character as a normal, and only occasionally pathogenic, parasite resembled in some degree bacillus coli communis. The latter, although a universal and, according to Bienstock, a useful parasite of the intestinal tract, became, nevertheless, like the pneumococcus, actively pathogenic when it found the opportunity of penetrating below the mucous membrane.

The pathogenicity of micrococcus pneumoniæ for man.—The pathology of pneumococcic infection might conveniently be considered with special regard to the following points: (1) the general results of blood infection and those of the toxæmia produced by the absorption and circulation of toxins formed in the local foci of infection in the tissues or produced by cocci which had infected the circulating blood itself; (2) the direct action of the parasite on the various tissues in which it became located in the course of an infection; and (3) what might be termed the secondary results of the infection—that is to say, those results due not to any direct action of the infecting organism but arising from the new morbid conditions brought about by the infection. In the case of pneumococcic infection these last secondary effects were often of the greatest consequence; there was the effect on the right heart of the obstruction to the passage of blood through the infected area of the lung, the result of sudden diminution of the surface available for the oxygenation of the blood, the effect of interference with cerebral function in cases of meningitis, together with others which had no immediate bearing on the present discussion.

Toxæmia in pneumococcic infection.—With regard to the exact nature of the toxic substances produced in the course of a pneumococcic infection they knew very little, whether such were actually secreted by the cocci themselves or whether they were formed from the infected tissues by the action of the cocci. Klemperer had isolated a toxic albumose, pneumotoxin, from broth cultures of the coccus by precipitation with sulphate of ammonia and alcohol; formic acid was also produced in some quantity in such cultures. Auld had isolated from the tissues of infected animals by precipitation with absolute alcohol an albumose and a residue soluble in alcohol and consisting mainly of an organic acid. The albumose when injected into the thorax of the rabbit set up a lobar pneumonia with pleural and pericardial effusions and when injected into the subcutaneous tissue a cellulitis; the acid residue, soluble in alcohol, was innocuous. As to the action of the toxins on individual tissues, so far as such action was manifested by histological changes but little was known. Carnot and Fournier described definite alteration in the cardiac muscle of the rabbit produced by the injection of small quantities of filtered toxic broth. The changes included an exaggeration of the transverse striation, with vacuolation, dissociation, and fragmentation of the muscle fibres. There was also some swelling of the connective tissue of the muscle, with a subsequent hyaline degeneration. Similar changes were to be found in the voluntary muscles. Carnot and Fournier had found in two cases of pneumonia in man changes in the heart-muscle similar to those occurring in the rabbit. Maragliano, on the other hand, believed that the changes found in the heart-muscle in pneumonia were not due to the direct action of toxins but were secondary to nerve-lesions. There was a certain amount of evidence that changes in the motor ganglion cells might result in pneumonia. Campbell Thomson and himself when investigating the action of various bacterial toxins on the motor cells of the cerebral cortex found some indication of structural alteration in these cells, when stained by Nissl's method, in pneumococcic infection. In the mouse the ganglion cells showed merely the appearance of uneven staining. In the rabbit the changes were more marked; the cells were swollen and showed uneven staining, irregular dark areas alternating with areas of lighter staining; the nuclei were indistinct and the cell body generally had a blurred appearance. There was, however, no reason to suppose that these changes were specific or in any way peculiar to the particular bacterial toxin used, such as the changes which they had found in experimental tetanus were. The changes in the pneumococcic infection nearly resembled, in fact, those which Campbell Thomson had found in a variety of morbid conditions in which the common factor of a high temperature came into play. Cases of post-pneumonic paralysis had been described in man, and Auld had observed paralysis of the extensor muscles of the fore-limbs occurring in rabbits at some long interval after the injection of the toxin.

The local action of the pneumococcus on the tissues infected.—The local action of the pneumococcus under the conditions of a natural infection varied according to the susceptibility of the individual infected and partly, perhaps, although probably in a less degree, on the virulence of the actual strain of coccus present. Carnot and Fournier had pointed out that the nature of the lesions produced by pneumococcic infection in man, in the guinea-pig, and in the rabbit presented a gradually ascending scale of severity, the exudation being sero-fibrinous, purulent, and hæmorrhagic in the

respective cases. This was, of course, only partly true. In man all three varieties of exudation might be met with; the exudation might be purulent from the first, sero-fibrinous and becoming purulent, and sero-fibrinous and remaining so; and occasionally hæmorrhagic lesions were seen. A case of extensive cellulitis of the forearm, following a wound of a finger when doing a post-mortem examination, was quoted as an example of a pure pneumococcic infection of a primarily pyogenic character. Other examples were seen in the acute but circumscribed abscesses which occurred on the fingers after cuts in the post-mortem room or the abscesses in the tonsil which were sometimes a result of pure pneumococcic infection.

Fibrinous lobar pneumonia.—The first point which had to be considered with regard to fibrinous lobar pneumonia was whether the pneumonia was merely a manifestation of a general pneumococcic infection or whether it was at first a local infection. Latterly the general tendency had been to the former view, the pneumonia being looked upon as an incident in the course of a general infective disease. Mr. Foulerton thought, however, that the usual sequence of events showed that the lung infection was the primary condition and that any general blood infection was secondary to this, and, moreover, not of such common occurrence as some had suggested. Whichever view was adopted, it was certain that it was only in a comparatively small number of cases of pneumonia that any proof, direct or indirect, of a general blood infection could be found. The most reliable statistics of the result of blood examination in pneumonia were those of Franklin W. White of Boston, U.S.A., who examined the blood in 19 cases, drawing off five cubic centimetres direct from a vein with a syringe. On transferring the blood to culture media a culture of micrococcus pneumoniæ was obtained in only three cases, and each of these three proved fatal. Two of these three cases were examined post mortem and in both evidence of general blood infection was found. In seven other cases out of the 19 which also terminated fatally and in which the blood drawn off during life had proved sterile there was no evidence post mortem of any general blood infection. Indirect evidence of general blood infection was found in a certain number of cases in which after pneumonia lesions, such as endocarditis, meningitis, or arthritis and the like, occurred in parts remote from the lungs. Amongst the more uncommon of such lesions a pure pneumococcic parotiditis must be mentioned. Fraenkel and Reiche had found the specific coccus in the kidney in 22 out of 24 cases of pneumonia examined post mortem. With regard to the causation of fibrinous lobar pneumonia, and looking upon the lesion as arising from a local infection of the lung, it was quite possible that the old belief as to "chill" or exposure to cold having some share in the causation was well founded. There was no doubt but that exposure to cold would produce some temporary congestion of the capillaries of the lungs, and under those conditions it was quite likely that there was just sufficient alteration in the cells lining the air vesicles to render them less efficient in resisting an invasion by any bacteria which might come to rest on them. The access of potentially pathogenic bacteria with the air was prevented under the conditions of normal respiration through the nostrils by the mechanism which provided for the freedom of such inspired air from bacteria. But given an attack of reflex coughing, due to the irritation set up by a congested state of the air-passages, it seemed possible that minute particles of mucus from the mouth charged with cocci, having been disturbed by expiratory efforts in coughing, might subsequently be inhaled directly into the lungs with the next deep inspiration taken through the open mouth. Another point of interest was as to the exact proportion of cases of fibrinous lobar pneumonia which were due to pneumococcic infection. Weichselbaum identified the pneumococcus in the exudation of 94 out of 129 cases examined, his results being verified by culture in 54; Netter gave the proportion at about 75 per cent. and other observers had found it to be still higher. With regard to "epidemic" pneumonia Mr. Foulerton thought that this was not usually due to a pneumococcic infection. During the last year he had examined material from cases of epidemic pneumonia then prevalent at Middlesbrough. The disease was certainly characterised by fibrinous lobar pneumonia, but none of the cases were due to pneumococcic infection and he had come to the conclusion that the causative parasite in these particular cases was a bacillus having all the characters of bacillus coli communis, a conclusion which corresponded with that arrived at by Klein and Ballard when investigating a similar outbreak of epidemic pneumonia at the same place some years previously. Fibrinous lobar pneumonia was not, of course, the only result of pneumococcic infection of the lung; there was a pneumococcic broncho-pneumonia, especially in children, and the pneumococcic perinodular pneumonia of cases of pulmonary phthisis.

Pneumococcic empyema.—The pleural effusion which occurred to a greater or less extent in probably every case of lobar pneumonia was in the majority of cases due at first to the irritation of toxins passing through from the neighbouring infected lung and not to the presence of the cocci themselves in the pleural sac. And, excepting one case which occurred in a child, he had never found the pneumococcus in a non-purulent pleuritic effusion which was sufficiently extensive to have required tapping. In adults empyema usually occurred as a complication of lobar pneumonia; in children the pleural lesion was, he thought, frequently the primary one. And considering how well cases of empyema in children did under surgical treatment it was difficult to believe that there was a lobar pneumonia underlying any large proportion of them. Bacteriologically, there was a marked difference in the causation of empyema generally in children and adults. The two parasites which had caused a very large proportion of all the cases of empyema which he had examined were streptococcus pyogenes and micrococcus pneumoniæ; in his own cases the streptococcus had caused about 75 per cent. of the cases in adults and 25 per cent. of those in children, whilst the pneumococcus had caused about 75 per cent. of the cases in children and about 25 per cent. of the cases in adults; this was excluding a small minority of cases in which organisms other than these two were present.

Pneumococcic arthritis.—Cave had recently published an excellent paper on the Arthritic Manifestations of Pneumococcic Infection, giving details of cases in his own practice and of 30 other cases recorded. Of 31 cases 23 died and only eight recovered. In one case the symptoms of the arthritis preceded those of pneumonia, in 27 cases the pneumonia preceded the arthritis, and in three cases there was no history of pneumonia either antecedent or subsequent. In 19 cases only one joint was affected, in seven cases two joints were affected, and in two the arthritis was multiple—that is to say, more than four joints were affected. When the details of published cases were considered it was obvious that the joint affection might take one of three forms: it might be purulent from the beginning, it might be at first sero-fibrinous and then purulent, or it might remain sero-fibrinous throughout, in the last case assuming sometimes the type of an osteo-arthritis. Rendu had recorded a case of pneumococcic infection of the sterno-clavicular and knee-joints in which at the time of examination the fluid in both knees was still sero-fibrinous, whilst in the sterno-clavicular joint it was purulent. As examples of the less acute forms of pneumococcic arthritis the case recorded by Fernet and Lacapère was quoted in which an osteo-arthritis of the wrist with teno-synovitis followed an attack of pneumonia. In that case full bacteriological evidence of the nature of the joint infection was obtained. Fernet and Lorrain had previously recorded two similar cases of osteo-arthritis with teno-synovitis following pneumonia in which the diagnosis of pneumococcic infection was founded on clinical evidence only.

Pneumococcic meningitis.—A pneumococcic meningitis might be acute and purulent in character or more chronic and with a sero-fibrinous exudation. Details of an acute case were given and the rapidity with which these cases ran their course was pointed out. The sero-fibrinous form apparently occurred only in children; it was uncommon, but Levi had recorded two well-marked cases occurring in children after broncho-pneumonia, and Dr. Lazarus-Barlow would refer to two other cases. The lesions in this form might be exactly those of the basic meningitis described by Still, which was in his cases undoubtedly due to diplococcus intracellularis meningitidis of Weichselbaum. The points of differential pathological diagnosis between the forms of cerebro-spinal meningitis due to infection by streptococcus pyogenes, diplococcus intracellularis meningitidis, and micrococcus pneumoniæ were referred to. Streptococcus produced only a purulent meningitis, whilst the other two produced either a purulent or sero-fibrinous form. In the purulent form the lesions were very similar whichever organism was present; there was the same purulent infiltration of the pia mater extending over the base of the brain and most marked on the dorsal aspect of the cord. Councilman, Mallory, and Wright had

pointed out that in the pneumococcic and streptococcic forms the inflammation did not tend to spread from the pia mater into the substance of the brain or cord, as in the case of infection by diplococcus intracellularis; in the first two forms there was, however, an amount of endarteritis of the pial vessels not found in the other. Epidemic cerebro-spinal meningitis was probably never due to micrococcus pneumoniæ, the diplococcus intracellularis meningitidis being the organism always present in such case. Pneumococcic meningitis might be the only lesion present, or it might be secondary to pneumonia, to otitis media, or to fracture of the base of the skull passing through the middle ear.

Pneumococcic peritonitis.—This, like many of the other manifestations of pneumococcic infection, might occur under two forms, the sero-fibrinous and the purulent. It was most frequently met with in children, only two out of 17 cases quoted by Dieulafoy having occurred in adults. Menetrier and Legroux had recorded two additional cases in cases, which illustrated the two types which the peritonitis might assume. In one case, in which the patient died eight days after the onset of symptoms, the peritoneal exudation was found to be purulent; in the other, in which the patient died some five weeks after the onset of symptoms, the exudation was sero-fibrinous and the visceral peritoneum was covered with a layer of lymph. The latter case was remarkable also from the fact that embolism of the left brachial, the right popliteal, and the left Sylvian arteries had occurred. Amongst children peritonitis from this cause was most common in girls, whilst the cases recorded in adults had been in males.

The other manifestations of pneumococcic infection which were briefly referred to were pericarditis, endocarditis, salpingitis, keratitis, and otitis media. Mr. Foulerton concluded with a reference to the method of testing the serum reaction in pneumococcic infection, as devised by Bezançon and Griffon.

The PRESIDENT (Dr. J. W. WASHBOURN) thought that the pneumococcus might certainly exist outside the body, but in a non-virulent condition. He gave an account of several cases of pneumococcic pleurisy. He was not satisfied as to the isolation of toxic substances from cultures of the pneumococcus, having failed to isolate any toxic albumose himself. In conjunction with Dr. Eyre he had carried out experiments to test the value of the serum reaction in pneumonia, but without any useful results.

Professor MICHELL CLARKE (Bristol) showed and commented on some cases of purulent pneumococcic meningitis; he also showed a specimen illustrating an uncommon complication of pneumococcic empyema, extensive thrombosis of the left axillary vein.

Dr. J. H. BRYANT (London) had had the opportunity of investigating three cases of pneumococcic peritonitis, two in young girls and one in an adult male. In the last case both pneumococci and streptococci were present.

Dr. E. J. CAVE (Bath) referred to his work on pneumococcic arthritis and recorded an additional case which had occurred in his practice since the publication of his paper.

Dr. LAZARUS-BARLOW (London) referred to two cases of posterior basic meningitis in infants, from which pure cultures of the pneumococcus had been isolated. Clinically and anatomically these cases had resembled those described by Still as due to infection by the diplococcus of Weichselbaum. His cases, however, showed that the condition of posterior basic meningitis in children might be caused by more than one organism.

Dr. J. W. EYRE (London) referred to the method which Dr. Washbourn and himself had elaborated for determining the virulence of cultures of the pneumococcus, by diluting a loopful of culture from a solid medium and they had been able to establish a standard of normal virulence for the organism. Using their own method they found that there was considerable variation in the virulence of cultures from different cases.

Dr. GEORGE BATTEN (London) recorded a case of cerebral abscess from which a man died eight months after an attack of pneumonia. The abscess was of the size of a small orange and was situated in the anterior part of the right cerebral lobe. The symptoms produced had been very indefinite. The pus of the abscess contained the pneumococcus and some staphylococci.

Dr. THEODORE FISHER (Bristol) called attention to the occurrence of abscess of the lung in pneumonia; he did not think that this complication was as uncommon as was generally stated to be the case. He had met with such abscesses in five cases, in all of which a mixed infection was present, the pneumococcus with bacillus coli communis or with streptococci.

Mr. FOULERTON replied, referring to various points raised in the discussion.

Dr. R. H. STEEN (Chichester) gave a demonstration on a new Electro-thermal Paraffin Bath which had been found useful when a supply of gas for heating an oven could not be obtained. The temperature was kept remarkably constant and the range of variation was not appreciable with an ordinary thermometer.

Dr. J. W. EYRE read a paper, Further Notes on Media of Standard Reaction. Dr. Eyre described his methods in detail and laid especial stress on the necessity for a somewhat prolonged heating of the meat infusion employed, in order that a maximum acidity before the final standardisation might be obtained.

Professor GLEY (Paris) read a paper on Variations of Iodine in the Thyroid in Graves's Disease and principally in the Blood after Removal of the Thyroid.—Mr. WALTER EDMUNDS (London) took part in the discussion which followed on the reading of Professor Gley's paper.

Dr. WILLIAM HUNTER (London) read a paper on the Diagnosis of the Presence of Bacillus Coli Communis by Means of Neutral Red.

OPHTHALMOLOGY.

THURSDAY, AUGUST 1ST.

Mr. J. B. LAWFORD (London), in opening the discussion on

The Relation of Gonorrhœa to Diseases of the Eye exclusive of Purulent Ophthalmia,

said that although the gonococcus had been found in inflamed joints and serous membranes its presence had not been demonstrated in the eye apart from gonorrhœal ophthalmia. Modern observations tended to show that mild conjunctivitis sometimes came on during an attack of gonorrhœa, not due to the gonococcus although possibly due to inoculation with an attenuated virus. The association of iritis and iridocyclitis with gonorrhœa had been long recognised. In many cases it occurred concurrently with arthritis, though not invariably. Both were liable to relapse without any fresh infection. Scleritis and episcleritis were not so frequent and still less so were retinitis and neuro-retinitis. In the former there was a possibility of embolic infection. One or two instances of bilateral infection of the lacrymal gland were on record.

Mr. R. J. HAMILTON (Liverpool) described a case of gonorrhœal iritis in which there was no arthritis.

Dr. R. A. YELD (London) had recently analysed 159 cases of iritis. In 28 patients there was a history of gonorrhœa and 26 had arthritis as well. In 13 cases there co-existed iritis, arthritis, and gonorrhœa. 8 per cent. were therefore attributable to gonorrhœa. Conjunctivitis was a common complication; the great difficulty was to exclude syphilis as a factor.

Dr. DARIER (Paris) had seen many cases of iritis associated with metritis and endometritis not proved to be gonorrhœal which subsided with the cure of the uterine trouble.

Mr. HENRY POWER (London) thought that cases of gonorrhœal iritis must be very rare.

Mr. RICHARDSON CROSS (Bristol) considered that there was no doubt about the occurrence of gonorrhœal iritis and had frequently met with it.

Major H. E. DRAKE-BROCKMAN, I.M.S., said that he had seen instances of gonorrhœal iritis complicating gonorrhœal ophthalmia.

Mr. SYDNEY STEPHENSON (London) said that he had recently seen two cases of gonorrhœal conjunctivitis with arthritis.

Mr. DEVEREUX MARSHALL (London) described the exudation in the anterior chamber in these cases; he had never found the gonococcus present there.

Mr. L. V. CARGILL (London) drew attention to the numerous cases of rheumatic iritis in which there was a history of gonorrhœa.

Mr. G. W. ROLL (London) questioned Mr. Lawford on his experience of the use of salicylate of soda in these cases.

Mr. LAWFORD, in reply, said that he had not seen this form of iritis in females. He thought that in cases of gonorrhœal iritis complicating gonorrhœal conjunctivitis one

could not positively exclude a solution of continuity in the surface.

Dr. C. S. BLAIR (London) exhibited a New Portable Refractometer.

Mr. G. W. ROLL made some observations on Hess's Operation for Ptosis suggesting some slight modification of the insertion of the sutures, placing them nearer to the edge of the lid.

Mr. R. J. COULTER (Bristol) described some interesting Visual Fields. He showed tracings taken from patients with various diseases of the optic nerve and other lesions, functional and organic. He strongly advocated the use of *black* spots for use with the perimeter.

Mr. G. HARTRIDGE (London) thought that too large an object was used with the perimeter and that the size should be stated.

Mr. L. V. CARGILL read notes on Ophthalmic Experience in the Imperial Yeomanry Hospital in South Africa, exhibiting specimens of eyes and projectiles which had injured them. He described the most frequent forms of injury, including some of the cervical sympathetic.

Mr. HENRY POWER pleaded for the

Occasional Employment of Depression for the Cure of Cataract.

The operation was universally adopted in days gone by and many native operators still used it, often with brilliant success, even in the absence of antiseptic precautions. In early days he had both witnessed its performance by others and practised it himself. The dangers of the operation were greatly exaggerated. He did not advocate its revival in ordinary cases or where there existed adhesions of the iris, but he thought it might be undertaken in very old and feeble people, in small and depressed eyes, in cases of incurable chronic conjunctivitis, in complete deafness where the patient could not be made to understand the details of after treatment, in lunatics, sufferers from chronic bronchitis, in cases of tremulous lens with fluid vitreous, in cases unsuccessfully operated upon, and, lastly, in cases of hæmophilia.

Lieutenant-Colonel J. L. POYNDER, I.M.S., stated that he had seen a great many cases of couching, but usually the patients came to him on account of serious complications which had followed after the operation had been done by natives. He thought that in many cases in India it was justifiable. The puncture was usually made through the cornea.

Mr. RICHARDSON CROSS had tried the operation in tremulous irides with fluid vitreous.

Mr. DYKES BOWER (Gloucester), Mr. G. W. ROLL, Mr. TATHAM THOMPSON (Cardiff), and Mr. G. HARTRIDGE also spoke.

Mr. POWER, in reply, said that he always punctured through the sclerotic, first tearing the posterior capsule and then passing the needle in front of the anterior.

Mr. R. J. HAMILTON, in describing the

Treatment of Hypopyon Ulcers of the Cornea,

advocated the local division of blood-vessels near the ulcer and application of leeches to the outer canthus. The actual cautery was of the utmost value and gave the patient much relief; other local treatment he considered to be of little use.

Mr. RICHARD WILLIAMS (Liverpool) said that he only occasionally evacuated a hypopyon in severe cases, preferring a small linear incision to Saemisch's section. He approved of the use of quinine.

Mr. TATHAM THOMPSON thought the influence of bad surroundings was very serious in infective ulcers of the cornea. 1 in 5000 formol was now his favourite remedy.

Mr. H. E. JONES (Liverpool) said that he saw the condition frequently in colliers. He had almost entirely given up the cautery.

Dr. DARIER strongly advocated the galvano-cautery and in some cases the sub-conjunctival injection of cyanide of mercury.

Mr. DYKES BOWER recommended the use of the galvano-cautery and fluorescin; a general anæsthetic was essential.

DISEASES OF CHILDREN.

THURSDAY, AUGUST 1ST.

This section resumed its work (all its officials being present) by Dr. F. FOORD CAIGER (London) opening a discussion on

The Early Diagnosis of the Acute Specific Fevers.

He began by emphasising the necessity for early diagnosis in this class of cases so as to secure prompt isolation. His first group comprised those acute specific fevers associated with catarrh of the naso-pharynx, such as rubella, measles, feverish colds, and whooping-cough. In measles, besides the cold in the head and watery eye, there was often a blotchy condition of the face a day or two before the rash came out. In measles after scarlet fever the rash frequently came out on the first day. In rubella there was occasionally malaise for some days before the appearance of the rash. The nasal catarrh was slight, the throat symptoms were slight, and there was no catarrh of the fauces or the bronchial tubes. Often there was enlargement of the glands in the posterior cervical region sometimes below the mastoid or at the angle of the jaw. The fever was slight and transient. The main difficulty in the diagnosis was deciding about the rash. In rubella the spots were smaller, rosier, raised, and less persistent than they were in measles. In measles Koplik spots were valuable. They were minute bluish-white specks on the buccal mucous membrane, nearly opposite the molar teeth, never on the palate. They appeared three or four days before the skin eruption. Later they might get surrounded by a definite red areola. They were not aphthous but a part of the general endanthem in measles. Observers had given 165 cases of measles in which in every case these spots had been seen and another set of 266 cases where 244 showed them. His own experience was not so satisfactory. In whooping-cough sometimes the sickness (apart from the cough) was an early symptom, then the paroxysmal cough (especially at night), the puffiness round the eyes, viscid sputa, and nervous symptoms, such as bed-wetting, were valuable. A peculiar bacillus had been found in the sputum. He then discussed the symptoms of laryngeal catarrh, croup and membranous croup, and diphtheria. Throat affections were common in diphtheria, scarlet fever, and tonsillitis. The bacteriological test was the only real one, though surrounded by many difficulties. (1) The Klebs-Löffler bacillus was found, not definite clinical symptoms; then not conclusive save by animal inoculation; (2) the same with clinical symptoms of diphtheria could be taken as quite correct; (3) no bacilli (on two separate occasions) and clinical symptoms negative, equals no diphtheria; (4) no bacilli could not be accepted as negative if the clinical symptoms were well marked. The Neisser stain was recommended as very distinct. Follicular tonsillitis showed the exudation in spots not coalescing, and limited to the tonsils; there would be no albuminuria and more fever than was common in diphtheria. There might be a slight rash, not punctiform, and not lasting 24 hours. In scarlet fever generally there was a sore throat from the onset, which in four-fifths of the cases was accompanied by vomiting. The tongue was creamy white, which later cleared of, leaving a brick-red shiny surface. He then alluded to the two types (one sometimes called the fourth disease) of rubella—one like measles and the other like scarlet fever.

The PRESIDENT (Mr. FREDERIC EVE, London) asked if there was any diagnosis between surgical scarlet fever and septicæmia.

Dr. E. W. GOODALL remarked on the prodromal rash in measles, much like a scarlatiniform rash, but not punctiform or very slightly so, which faded before the real measles rash came out; it was a diffuse brilliant erythema on the trunk on the first or second day of the attack. The ordinary eruption of scarlet fever was not punctate at first. There was a similar prodromal eruption in varicella on the first day, and occasionally this rash came out after the real rash was evident. Was there a rash in acute pneumonia, as cases were sometimes sent to the fever hospital with this complaint for scarlet fever? Sometimes in measles, after one or two days of catarrh, a complete remission of all symptoms occurred. The Koplik spots were not always present. In a child with laryngeal symptoms, where there was no definite history, treat as diphtheria. He quite agreed with Dr. Caiger on the value of bacteriological examination. In a large number of cases of scarlet fever there was no sore throat (children, also, often did not complain of it), so that the diagnosis was very difficult. Where a patient had continued pyrexia, with early vomiting and delirium, and did not yield at all to antitoxin, it would be wise to suspect scarlet fever.

Dr. H. ASHBY (Manchester) considered that everything should be taken into account in making a diagnosis. His experience of the Koplik spots was not satisfactory. He believed measles to be infectious from the first day of the disease. He had often seen influenza in children attended by a paroxysmal cough, closely simulating whooping-cough, without the whoop. Enlarged glands at the angle of the jaw would

always suggest diphtheria or scarlet fever, even though there was no appearance of disease in the throat. The diagnosis of scarlet fever in a surgical ward was full of difficulty. Acute pneumonia, especially of the cerebral or gastric kinds, with little physical signs, and those apical with hyperpyrexia and vomiting, closely resembled scarlet fever before the rash came out. As to the fourth disease there were cases of this (or the scarlatiniform kind of rubella) which had got scarlet fever afterwards, tending to show that they were not the same disease.

Dr. F. J. POYNTON (London) had seen cases of fourth disease with hardly anything to distinguish them from mild scarlet fever. Swelling of the posterior cervical gland was an early symptom of German measles and a prodromal rash, a faint and abortive edition of the real exanthem, went off in a day or two before the real one came.

Dr. W. J. TYSON (Folkestone) considered it a great mistake to be too dogmatic in diagnosis of these difficult cases and dealt with the cases called in old times gastric and low fever; these he thought were really due to toxin absorption and had nothing to do with typhoid fever.

Dr. WATSON WILLIAMS (Clifton) showed two good coloured sketches of Koplik spots and said that he had never found them in German measles nor had he seen them in any suspected cases of measles which did not prove to be real measles afterwards. He had seen all varieties of German measles, from the morbilliform to the scarlatiniform kinds, and considered that the two extremes were rather varieties of rubella than that the latter kind was another (the fourth) disease.

Dr. LOVELL DRAGE (Hatfield) said that the scientific position of the acute specific fevers should be always taken into consideration. One should look on every sore-throat as a possible diphtheria. Bacteriology so far from helping had, in fact, muddled the diagnosis. He ended by referring to the measures taken to suppress the plague at Glasgow.

Dr. MANSEL SYMPSON (Lincoln) had always found the posterior cervical glands enlarged early in German measles. He noted that the rash came out behind the ears and around the nose and mouth, sometimes it had rather the size and shape of the measles spots, but with the scarlet fever colour. He had been much helped in diagnosing scarlet fever by the "circumoral pallor" described by Dr. Caiger. An early sign in scarlet fever was the great heat of the skin to touch. This occurred also in acute rheumatism and in acute pneumonia. The last disease (when of the gastric or cerebral type described by Dr. Ashby) in children often had no physical signs for two or three days after the onset of the illness, and so might reasonably be placed among the acute specific fevers. Not much was heard nowadays of these fevers beginning with fits of convulsions. He lately saw three children in one family all taken ill on the same day, of whom two died in fits and the third developed typical scarlet fever. He related a case of diphtheria which apparently had developed in the lung and travelled outwards to the larynx and tonsils. In an analysis of cases of diphtheria in Dr. Gee's wards at St. Bartholomew's Hospital during a period of 10 years which the speaker had made some years ago he found that the most constant sign of the disease was swollen glands at the angle of the jaw.

Dr. CAIGER replied. He considered the surgical scarlet fever alluded to, a diffused erythema in children, to be really scarlet fever. There was a septic rash due to absorption which was rather of the morbilliform kind of eruption than scarlatiniform. He would say, "No Koplik spots, then not measles." The prodromal rash of measles came on during the early febrile stage; very often a distinct scarlatiniform eruption was very likely to mislead. The Koplik spots must not be mistaken for flakes of milk, buccal glands, air-bubbles, or the orifice of Steno's duct. Where in scarlet fever there was a sore-throat early or a late rash the throat very probably was the cause of the scarlet fever and so not a scarlet-fever throat at all. Also, it might be a conjunction of scarlet fever and diphtheria, which was always dangerous. Frequently there was a "kick up" temperature in the incubation state of measles. The spasmodic cough in influenza was very like that of whooping-cough. He was very doubtful if the later stages of desquamation in scarlet fever were dangerous. He was inclined to class the fourth disease when there was much peeling with scarlet fever.

Dr. J. H. THURSFIELD (London) read a paper on Widal's Serum Reaction in the Diagnosis of Typhoid Fever in Children. Out of 100 cases 42 gave positive reaction. It seemed to be a valuable and trustworthy aid in the early diagnosis of typhoid fever in children.—Dr. CAIGER congratulated Dr. Thursfield on the very satisfactory results.

Dr. SINCLAIR WHITE (Sheffield) then read an excellent paper on the Ultimate Results of Tendon-grafting in Infantile Paralysis, which was discussed by Mr. F. C. ABBOTT (London) and Mr. A. H. TUBBY (London) and Mr. WHITE replied.

Mr. F. C. ABBOTT produced a Specimen and Photographs of a very interesting case of Intra-uterine Rickets.

LARYNGOLOGY AND OTOLOGY.

THURSDAY, AUGUST 1ST.

Dr. MIDDLEMASS HUNT (Liverpool), Dr. BARCLAY BARON (Bristol), and Mr. RICHARD LAKE (London) opened a discussion on

The Local Treatment of Tuberculosis of the Larynx.

Dr. MIDDLEMASS HUNT said that it was 11 years since the subject had been discussed by that section of the Association. In 1890 the epoch-making work of Heryng on "The Curability of Laryngeal Phthisis" had not long been published. Although all the bright hopes with which the writings of Krause and Heryng had inspired them had not been realised a great and permanent advance in the treatment of a desperate disease had been made and they must not go back. In every case of laryngeal phthisis he tried to determine whether it was one for curative or for palliative treatment. Curative treatment, as he understood the term, he said, was essentially surgical. It meant the removal of all diseased tissues by cutting instruments or their destruction by caustics, such as lactic or chromic acid. Palliative treatment included all antiseptic and local anæsthetic applications and was only occasionally surgical, as when the necessity arose to relieve dyspnœa or severe dysphagia. The cases suitable for curative treatment were those of limited disease and of hypertrophic form indicating local resistance, cases in which the lung disease was slight and stationary or only very slowly progressive, the general health and appetite good, the patient free from fever, and of a courageous and hopeful temperament. The treatment must be strictly palliative, he said, whenever the ulceration and infiltration were extensive and with much œdema or perichondritis, also when there were high fever, loss of appetite, advancing lung disease, or evidence of the patient being deeply stricken. In his opinion neither lactic acid nor any other application would remove an infiltration covered by unbroken mucous membrane. Wherever they had well-defined or at least limited infiltration without ulceration, a mass of granulations, or a distinct tumour formation, the first step must be the thorough removal of the diseased tissue by the curette, followed by an application of lactic acid. He had seen rather free hæmorrhage after using the cutting forceps. He had never performed the extensive operations advocated by some, but had confined himself to cases in which there had been some probability of removing the whole of the diseased tissues by curette or forceps. He considered that it was of little use to employ solutions of lactic acid of less strength than 50 per cent., and, if it were tolerated it was better to go on rapidly to pure acid, healing being often hastened by first thoroughly curetting the ulcerated surface. Speaking of palliative treatment, he said that although it might not be possible to eradicate or to arrest the disease, much could be done to relieve suffering; an untreated case of laryngeal phthisis went more rapidly to the bad and with more suffering to the patient than a treated one. It was a difficult question to decide to what extent surgical means might be used in the palliative treatment of the disease. The incision of an inflammatory œdema of the arytænoid or epiglottis, which was first practised by the English physician Marcet, was a rational surgical procedure which would often relieve dysphagia and was not followed by ulceration as was at one time feared on purely theoretical grounds.

Dr. BARCLAY BARON considered the question of the extent to which laryngeal tuberculosis could be looked upon as curable. Cure, he said, could be looked for only in those cases in which a favourable pulmonary and constitutional state existed, and only in a small proportion of all such cases where lung and larynx were both attacked. Local treatment alone, he said, would not suffice to effect a cure, it must always go hand in hand with general treatment. The aims

of local treatment he described as threefold; first, to attack and to destroy by direct surgical and topical medical treatment the bacilli; secondly, by giving rest to the affected organ and by protecting its tissues from irritation and inflammation to restore the natural resistance to disease which if attacked by bacilli they had largely lost, and so indirectly to destroy the bacilli; also to help tissues not yet attacked to retain their health and so prevent spread of the mischief; and thirdly, in cases in which one was not able to do much in either of these directions, to ameliorate symptoms of which the most important was dysphagia. In the early stage of the disease local treatment, he said, should be of the mildest possible character. It should merely consist in giving such instructions to the patient as would give rest to the organ, and in every way should be that suitable for a simple laryngitis. In the next stage, that of infiltration, the larynx must be shielded from all irritation, including that of too much use of the voice, and purposeless cough must be stopped by suitable drugs, such as codeia, cocaine, and menthol. In the third or ulcerated stage of the disease local treatment, he said, was most definitely valuable. Many drugs had been recommended to set up a healthy and healing action in ulcerated and necrosed structures, but he had not found any of them so thoroughly satisfactory as lactic acid.

Mr. RICHARD LAKE observed that 15 per cent. only of cases of laryngeal phthisis could be cured by surgical treatment. Speaking of the removal of the epiglottis when diseased, he said it had been brought to his notice that the operation he had described had been previously performed by others.

Dr. A. MCCALL (Bournemouth) spoke of the good results he had obtained by insufflating a mixture of resorcin and orthoform, using two parts of the former and one of the latter; this he found led to diminution in granulation tissue and to an improvement in voice.

Dr. JOBSON HORNE (London) said it was difficult to overrate the importance of the subject; it was also difficult to overstate the frequency with which it had been discussed, but that it was still more difficult to arrive at any very precise conclusions from what had been published as to the lines of treatment to be followed. The extreme surgical measures that had been recommended by some he considered were not remediable and at the best could only be regarded as mechanical means of overcoming physical difficulties which comparatively seldom occurred. He laid stress upon the pathological fact, which he had himself observed, that by the time the larynx was so extensively involved in the disease as to require surgical treatment cavitation of the lung was already established, so that in treating the larynx it was important to bear in mind that it was only a part of a diseased respiratory tract. In the more chronic form of tuberculosis of the larynx, in which thickening of the mucous membrane occurred without ulceration, he was opposed to a breach of surface being made by curetting, by punch forceps, and similar instruments, inasmuch as the hyperplasia constituted a protective action of the epithelium and submucosa, which was to be hoped for and encouraged. He referred to tuberculin as of assistance in bringing about a condition which would favour the quiescence or arrest of the disease, and in the more advanced cases with destruction of tissue he had found it of help in rendering localised lesions more amenable to surgical treatment.

Dr. WATSON WILLIAMS (Bristol) considered that surgical treatment was of service in those cases in which there were definite tuberculous tumours and growths requiring removal. He recommended injections of guaiacol and olive oil; he also agreed that it was best not to injure unbroken epithelium. A case was narrated showing the value of sanatorium treatment. He insisted upon rest of the larynx being as absolute as possible, even whispering to be prohibited. Insufflations of morphine would allay a useless cough.

Dr. STCLAIR THOMSON (London) said that when they got down to the bed-rock of the whole matter the results of the so-called surgical treatment were poor, and that more definite information was required about the cures that had been worked; bare statements such as "gratifying results" and "patient died cured" were insufficient. He took exception to the statement that curative treatment was essentially surgical. He pointed out the importance of rest in view of the fact that the observations recently made all pointed to the frequency with which the disease affected the region of the arytænoid articulation. Hope of success must not be placed in treating what might be roughly called the third stage, but in an earlier diagnosis together with open air and rest.

Dr. R. H. WOODS (Dublin) showed instruments for the local treatment with lactic acid and reported a case of Thyrotomy for Laryngeal Tuberculosis.

Dr. F. DE HAVILLAND HALL (London) considered that lactic acid promised definite relief to a certain proportion of cases. He had not gone in for the major surgical treatment. Where there was a breach of surface lactic acid might be used with or without curetting; where there was no breach of surface he did not advise curetting. He thought it was better to begin with a 25 per cent. solution of lactic acid and rapidly to increase the strength of the solution and, if necessary, the part to be treated could be thoroughly cocainised previously. He spoke of the value of orthoform and of the relief it afforded being more lasting than that of cocaine. He also agreed with the previous speakers who had urged the necessity for obtaining definite information about results; this, he thought, might be ascertained in London by the cases being brought before the Laryngological Society before, and twelve months after, surgical treatment.

Dr. W. PERMEWAN (Liverpool) considered that the lack of progress in the treatment of laryngeal tuberculosis was due to no definite and reliable statistics being available. He did not employ the extreme surgical measures that had been recommended and was of the opinion that some cases were made worse by interference; he adopted rather a palliative course of treatment and had found that localised lesions benefited most.

Dr. J. DONELAN (London) considered that better results could be obtained by cases being treated in institutions.

Dr. W. MILLIGAN (Manchester) also spoke in favour of more definite information about results being obtained.

Dr. ADOLPH BRONNER (Bradford) recommended formalin being used either by a spray or local application, commencing with a solution of the strength of 1 in 1000, to be gradually increased to 1 per cent.

Dr. N. C. HARING (Manchester) considered that possibly surgical treatment often hit the happy moment when the disease was becoming arrested, and thus they were liable to give more credit to treatment than was due.

Mr. C. A. PARKER (London) said that if the part was previously cocainised pure lactic acid might be applied, and without fear of excessive reaction. The reaction was more commonly insufficient; when this was the case pure chromic acid might be used by way of gaining time. The larynx, he thought, might re-infect the lung, therefore, if the lung was in a quiescent state it was better to treat the larynx.

Dr. MIDDLEMASS HUNT, in replying, hoped that there would be an expression of advance having been made in local surgical treatment.

Dr. BARCLAY BARON considered that in enforcing absolute rest of the larynx they must be logical in the local treatment recommended.

Mr. LAKE said that his statistics were incomplete and that owing to the patients having been lost sight of it would be difficult to complete them.

The PRESIDENT (Mr. T. MARK HOVELL), in summing up the discussion, said it was important that local and general treatment should be combined and that no cure would be obtainable so long as the disease was active in the lungs.

Dr. ADOLPH BRONNER read the notes of a case of

Recurrent Papillomata of the Larynx in an Adult treated locally by Formalin.

Recurrent papillomata of the larynx, he said, were most difficult to cure as they almost invariably recurred after removal. In children tracheotomy was the successful method of treatment. In adults tracheotomy was not only more dangerous but also impracticable for other obvious reasons. Many local remedies had been recommended but with no success. Dr. Bronner had recently treated a case with formalin; this had seemed to prevent recurrence. The patient, a man, aged 45 years, was seen in June, 1896; he had been hoarse off and on for over two years and was steadily getting worse. Both vocal cords were covered with typical papillomata. These were removed by forceps every two to three months. Various local remedies—e.g., lactic acid, nitrate of silver, &c.—had been tried. In December, 1897, the patient had a severe attack of laryngeal spasm and hæmorrhage, which nearly proved fatal. In December, 1898, a large number of growths were

removed. A spray of formalin, 1 in 1000, increasing up to 1 in 100, was ordered. In March, 1899, a few growths were removed. Since then there had been no recurrence of the growths. The vocal cords were thickened and irregular, but the voice was fairly good.

Dr. N. C. HARING read a paper on Multiple Papillomata of the Larynx.

TROPICAL DISEASES.

THURSDAY, AUGUST 1ST.

The VICE-PRESIDENT (Mr. JAMES CANTLIE, London) was in the chair.

Malaria and its Prevention.

The following papers on malaria were read.

His Excellency Sir WILLIAM MACGREGOR, K.C.M.G., M.D. Aberd., Governor of the colony of Lagos, read notes on Anti-Malarial Measures now being taken in Lagos. He remarked first on the importance of the subject of malaria in relation to Lagos and the advantage which would follow the control of malarial fever. In Lagos steps had been, and were being, taken as follows. As a preliminary every effort was being made to spread knowledge of recent malarial doctrine among Europeans and natives by pamphlets, lectures, and teaching in schools, and thus considerable interest in the subject had already been evoked. In active operations the greatest attention was being given (1) to prevention by administration of quinine; (2) to the use of gauze netting; and (3) to attacking the mosquito in its breeding-ground. As regards quinine most Government officers took it regularly. Some could not take quinine because of intolerance, and he himself thought that the taking of quinine should be compulsory among Government servants and that they should be tested as to toleration before being engaged. Judging from results it would seem tolerably certain that by the regular use of quinine as a prophylactic officers could be kept practically free from malarial fever. The great difficulty was to extend this preventive treatment beyond the service, more particularly to natives, but it was found practically impossible, on the ground of expense and the unwillingness of many natives to take it, to give quinine to the whole population. As regards mosquito netting reasons were given why such good results as had been obtained in Italy could not be expected in Lagos. Limited operations were, however, being carried out in this direction in Lagos. With regard to the attack on mosquitoes, swamps were being gradually filled up, kerosine was being used on anopheles pools, water-tanks of houses were being made mosquito-proof, undergrowth was being thinned out and the lower branches of the large trees removed, and general sanitary measures were being carried out in the town and along the railway. Sir W. MacGregor stated that from the more free use made of water in their neighbourhood the quarters of Europeans were more infested with mosquitoes than those of natives. For six months in the year, during the dry season, there was practically no propagation of the mosquito in the interior, and it might be practicable to exterminate mosquitoes in the hinterland were it possible to prevent their production near, and arrival from, the coast. The strong recommendations that Europeans should live away from natives, which he said might be called the academic recommendation, he was unable, from his point of view as an administrator, for reasons fully given in the paper, to accept. Sir William MacGregor concluded by remarking that though the measures taken in Lagos were no doubt far less than the measures required, still if they were persevered in for two or three years their effect would undoubtedly be felt and encouragement would be given to steps on a greater scale. It must not be forgotten that malaria was not the only disease that caused large mortality in Lagos and that large expenditure had to be incurred with reference to other diseases, notably dysentery.

Dr. J. M. YOUNG (Hong-Kong) contributed a paper on Malaria in Hong-Kong and its Prevention. Two distinct varieties of anopheles were abundant in Hong-Kong—anopheles costalis and anopheles sinensis—and nearly a dozen distinct species of culex. Dr. Young selected the following situations on the island for a study of the disease and its prevention: the Military Sanatorium, Lyemoon barracks, the men's married quarters, Kennedy-road, Pokfulam, Mount Richmond, and the Tai-po police-station. At each of these places it was shown that where no anopheles existed no malaria was found, that where the disease existed the parasite was found in the blood of children, and breeding-pools for anopheles were found in the neighbourhood. The seasonal increase of cases of malarial fever during the time of ploughing and harvesting the rice crops was due to the disturbance at these times of mosquitoes usually resting among the grass or growing paddy (rice) and feeding on the Chinese coming within their reach. Dr. Young pointed out the practical impossibility of dealing with mosquito larvæ by any germicides, and regarded the latter merely as useful auxiliaries in extermination of the pests. He regarded permanent good in this direction as possible only by clearing all long grass and undergrowth and destroying all breeding-places by draining, &c. A "cleared area" he considered of the first importance, as no mosquito would fly far from vegetation; and he fixed 150 yards as sufficient clearance around houses, as beyond that distance it was doubtful if mosquitoes would fly.

Captain C. F. FEARNSIDE, I.M.S., read a paper on the Inoculation of Malaria by Anopheles. He said that the central prison of Rajahmundri, Madras Presidency, was one of the most malarious jails in India, and from the years 1880 to 1897 no less than 60 per cent. of admissions for malarial fever in all the larger jails of that Presidency were accounted for by this prison. In 1899 Dr. Manson suggested that he (Captain Fearnside) should make investigations to see how far the anopheles mosquito was the bearer of the malarial organism. In November last he dissected 40 free anopheles which had at some time or other been feeding on the blood of the prisoners, and he found malarial sporozoites in one—i.e., 1 in 40. The sporozoites were very numerous in the veneno-salivary gland from the tenth to the twelfth day after infection. From the fifteenth day after haustellation the numbers decreased, so that there were few sporozoites in the gland on the nineteenth day. The infected mosquito could only infect a limited number of persons, and, further, to give a successful inoculation a considerable number of sporozoites must be infected, because if a small number only found their way into the blood the phagocytes destroyed them. Of 17 anopheles fed on blood containing summer-autumn parasites and crescents nine were found to contain Ross's cysts. The failures he had explained and the conclusion was that 70 per cent. approximately became infected. Of seven fed on blood containing spring tertian parasites all became infected. Eight persons were inoculated and of these seven contracted fever. The blood on which the anopheles fed originally was examined and the parasite recorded; the blood of the person inoculated was examined from time to time and also recorded. The incubation period was from 12 to 25 days for both types of fever. The prevention of the spread of malaria by means of wire-protected houses and mosquito-curtains was out of the question in India. To put the native population, men, women, and children, who sometimes had only sufficient money to keep body and soul together, under mosquito-nets and in mosquito-proof houses was impossible. The next suggestion one heard of was the destruction of anopheles. If this was to be done properly the rice-fields, which were the main source of food throughout a great part of India, would have to be abolished. Was the population to starve in the meantime? Famine had been quite bad enough in recent years without the abolition of these fields. The last remedies were the freer use of quinine and the segregation of infected individuals. The former seemed to be the more practical, but the segregation of infected natives would be as difficult a task as the wholesale slaughter of the anopheles.

Dr. GEORGE A. WILLIAMSON (Larnaca, Cyprus) read some Notes on Cyprus Fever. He commenced by calling attention to the unsatisfactory plan of giving the names of localities to diseases which, although doubtless found elsewhere, occurred in those localities, and went on to state that there was no particular form of fever which belonged to Cyprus alone, and which could therefore with any truth be called "Cyprus fever." Leaving out of the question all eruptive fevers, some of which occasionally occurred in epidemic form, the most common cause of fever was malaria. Undulant fever, which was now known to occur in many places, had been described as "Cyprus fever," but, of course, had no right to the special name; and it only occurred occasionally in Cyprus. The most frequent forms of fever were malarial (as proved by the microscope) and a febricula. The principal forms of malarial fever met with were tertian and quartan and their double varieties; pernicious malarial fever was now (in consequence of improvements—viz., draining and planting) far

less frequently met with than in former days. He gave tables showing the proportion of cases of malarial fever of different kinds to each other and of these cases to the whole number of diseases coming under notice in a given time, which indicated that Cyprus was far from being the fever-stricken place it was sometimes supposed to be.

Dr. GEORGE C. LOW (Barbados) gave the results of his Investigations in Malaria and Filaria in Barbados. He found neither anopheles nor malaria in Barbados; but found the culex mosquito and filarial diseases in plenty. He believed that filarial ailments and filariasis could be readily exterminated in Barbados by destroying the breeding-places of the culicidæ. The water-supply of the island was excellent, water being laid on in pipes to the houses, and the culex mosquitoes found their breeding-grounds in the rain-water tanks and pools around the dwellings. Were these tanks covered or done away with and the pools drained the filarial scourge would speedily, in his opinion, be mitigated or altogether wiped out.

Professor R. W. BOYCE (Liverpool) upheld a point contended for in Sir W. MacGregor's paper—namely, that measures adopted in West Africa to eradicate malaria must be adopted for natives as well as for Europeans. He believed that segregation would not be productive of so much good as the extirpation of mosquitoes bearing malarial infection.

Dr. EDWARD HENDERSON (London), although he regarded the method of exterminating mosquitoes as almost hopeless throughout the length and breadth of China, still believed that the example set by Europeans of the several methods of preventing malarial fever would produce a good effect amongst the Chinese and might stimulate many of them to follow the example.

Dr. P. MANSON, F.R.S. (London), held that different methods of dealing with malaria were applicable according to environment. In one place the administration of quinine was alone possible; in another the destruction of mosquito breeding-grounds; and in a third the protection afforded by mosquito netting. In some places all these plans of protection might be expedient, but it was unwise to depreciate one at the expense of the other, or to think that the amelioration even of malarial ailments was not to be aimed at, and he objected to any plan of defeating malaria being condemned merely because it was not completely perfect. It seemed impossible to compel negroes to take quinine, and the attempt about to be made by the Germans in this direction was bound to fail. Dr. Young referred in his paper to the culex larvæ consuming anopheles larvæ when placed in the same pool. When food was scarce this no doubt occurred, but when food was plentiful the two varieties of mosquitoes would be found living side by side amicably. Questions which it seemed expedient to go into were, why was malaria absent and why present in some parts of the tropics? why were anopheles met with in one place and culex mosquitoes in another? and yet again, why were they found both abundant in some places? Could these points be ascertained they would be approaching a rational solution of the mosquito difficulty, and be able to apply "natural" means of exterminating mosquitoes in the place of the present empiric plans by netting, quinine, and destruction of larvæ. They had examples of analogous methods of dealing with parasitic diseases afforded in the cases of the vines in France and of the orange trees in America and he believed that in the future means of prevention would be found in this direction.

Lieutenant-Colonel J. L. POYNDER, I.M.S., considered it impossible to teach the natives of India the use of preventive measures against either malaria or cholera.

Mr. CANTLIE said that the "Swatow lamp" in use in China and the Straits as a means of killing mosquitoes within a mosquito-net was a safe and sure method and that he had had the lamp made in London where it could now be obtained.

Dr. F. M. SANDWITH (Cairo) read a note on

The Entrance of Ankylostoma Embryos into the Human Body by Means of the Skin.

He affirmed that it had long been known that ankylostomiasis infection could occur by the mouth, but the present paper was to draw attention to Dr. Looss's discovery that the embryos had also the power of entering the skin chiefly by the hair follicles. In 1898 Dr. Looss announced this fact, but as there was no analogy for a parasite behaving in this way his paper met with no reception beyond a little hostile criticism. Like many scientific discoveries this was the result of a pure accident. While working in the laboratory of the Cairo medical school a drop of a pure culture of embryos fell on his hand; he happened to examine the drop some minutes later and was astonished to find that it contained countless *empty* embryo sheaths and a few sluggish embryos. The bulk of the embryos had apparently entered the skin. His hand became red and burning and he found himself later suffering from anæmia and debility with evidence of ankylostoma infection in the fæces requiring a prolonged course of treatment. Since then a similar experiment had been made on a human leg one hour before amputation. Sections of the skin showed that the embryos had entered chiefly by the hair follicles. Inside the follicle the embryos pushed their way towards the hair papillæ, during which process, if there were many in the hair follicle, the root sheath of the hair was almost completely destroyed. When the papillæ were reached the embryos left the hair follicle to pierce the surrounding tissue of the true skin.[1] A section under the microscope and some micro-photographs showed many embryos in different stages of entry. It was assumed that the embryo found its way from the skin to the small intestine, but of this there was as yet no proof. Dr. Looss's researches threw an additional light upon ankylostomiasis infection in many countries, and might lead to an analogous discovery with regard to bilharzia and perhaps other parasites.

Lieutenant-Colonel G. M. J. GILES, I.M.S., said that he had seen Dr. Looss's specimens in Cairo, and he quite agreed with his conclusions. He believed that the ova of the ankylostoma gained access to the body by the mouth, being conveyed on the dirty hands of coolies. The earth in Assam tea-gardens teemed with the ova, and as the coolie ate his food with unwashed hands he became infected with the parasite. He was, prepared, however, to agree that embryo worms could gain access by the skin, but he failed to understand how they could reach the intestines in the numbers they did unless they were swallowed.

Dr. MANSON deprecated premature conclusions being arrived at from the discovery of Dr. Looss. He looked upon specimens showing the embryos entering a hair follicle of the skin and thereby gaining access to the subcutaneous tissues more or less in the nature of a curiosity. Were the embryos of ankylostoma placed on the skin he believed they would seek shelter in a hair follicle, but he could not believe that this mode of infection was usual. He suggested further experimental research on the subject.

Lieutenant-Colonel ANDREW DUNCAN, I.M.S. (retired), read a paper on

The Causation of Enteric Fever in India,

in which he reviewed the various theories appertaining to the etiology of enteric fever. He mentioned the vicarious theory of Martin; the transformation theory of M. Colin, who held that fever primarily paludal could be transformed into enteric; the non-specific theory of Moore; the fæcal-poisoning theory of Fayrer; the climatic theory of Bryden; the opinion of Gordon that there was no such disease as enteric fever in India; and the theory of Home who regarded all diseases in which ulcers were met with in the intestine as enteric. Lieutenant-Colonel Duncan said that the factors concerned in the evolution of enteric fever in India were to be found in the facts: (1) the yearly advent in India of a large body of subjects at an age most liable to the disease; and (2) the country presented an environment to these subjects most favourable to the disease. Soldiers in India imbibed the liquids offered for sale in the native bazaars, and in spite of precautions within their barracks became thus infected and also by the dust conveyed by the winds and by the agency of flies. He upheld the inoculations of Professor Wright against enteric fever as being of great practical value.

Lieutenant-Colonel A. CROMBIE, I.M.S. (retired), stated that enteric fever in India was not commonly met with amongst natives. Ghoorkas were liable to the disease; but in Madras and in Lower Bengal enteric ulcerations were not found. He stated that he tested the blood of six natives of India in London and found that three gave Widal's reaction. All these were under 30 years of age and the three in which the reaction was negative were over 40 years of age. A continued fever lasting 21 days was common in India, in which there was no eruption, diarrhœa, or enlargement of the spleen. 75 per cent. of the cases of continued fever

[1] Centralblatt für Bakteriologie, May 31st and July 5th, 1901.

in South Africa during the Boer war gave Widal's reaction. Concerning the efficacy of Professor Wright's serum for enteric fever, Lieutenant-Colonel Crombie stated that of 300 patients convalescent from enteric fever whom he had seen, 60 per cent. had been inoculated once and 10 per cent. twice. Second attacks of enteric fever also had not infrequently occurred.

Captain W. R. BATTYE, I.M.S., believed that a benign bacillus could, according to environment, become pathogenic in its properties.

Lieutenant-Colonel POYNDER, I.M.S., believed that the immunity of adults in India to typhoid fever was in all probability due to their having had typhoid fever in their youth.

Dr. SANDWITH said that of course Professor Wright's method of preventing typhoid fever was as yet only on its trial. He had seen several cases of enteric fever amongst nurses who had been inoculated. He advocated blood examinations after inoculation to elucidate the effects of the anti-typhoid treatment.

Major F. P. MAYNARD, I.M.S., read a paper on

Some Ophthalmic Complications of Plague.

He called attention to the injected condition of the eyes which had been described by writers as characteristic of the plague facies, and discussed 12 cases of plague with ophthalmic complications which came under his notice during a recent severe epidemic of the disease at Patna. The plague symptoms in all the cases were, or had been, severe, but none of the patients died; six recovered with one eye sound; of the remaining 18 eyes vision was lost in five, partly lost in eight, and fairly good in five. The lesions were for the most part the results of iritis and opacity of media apparently from interference with the nutrition of the eye. Tension was diminished in 12 eyes and was normal in the rest. It was remarkable that, considering the frequent cases in which blood extravasations in various places throughout the body were met with in plague post-mortem examinations, in only one case did a fundus show hæmorrhage. Treatment, except in one case, was of no avail because it was started too late.

THE PATHOLOGICAL MUSEUM.

Relegated to one little room in a corner of the palatial edifice known as the "Winter Garden," the rest of which was devoted to the exhibition of drugs and foods, the Pathological Museum can hardly be said to have received its due share of space, certainly not commensurate with its importance. Perhaps it was a sign of the times.

Among the most interesting exhibits may be mentioned a valuable series of photographs illustrating the various lesions met with in the recent epidemic of arsenical poisoning among beer-drinkers, contributed to the collection by Dr. T. N. Kelynack (Manchester). This included excellent photographs of cases of atrophy of the lower extremities, general wasting, double wrist-drop, and dropped hands and feet; and among the skin affections, erythema with keratosis and pigmentation of the palms and soles, general pigmentation with characteristic distribution over the thigh and abdomen, extensive scaly eruption, melanosis of the arms and abdomen in a patient whose suckling infant, aged nine weeks, also presented symptoms of arsenical poisoning, and a case of ridges on the nails. A series of x-ray photographs was contributed by Mr. J. Hall-Edwards (Birmingham) who was with the Imperial Yeomanry in South Africa, which included representations of bullets in various positions. Here again we find undoubted evidence of the use of soft-nosed or expansive bullets by the Boers. The same exhibitor showed a portable coil and apparatus for taking radiographs in the field.

A series of interesting photographs by Dr. E. A. Dent (Cheltenham) showed various arthritic affections and malformations of the hands. Some beautiful and life-like sketches from the museum of St. George's Hospital, made by Joseph Perry in 1836, illustrated cases of pemphigus and Pott's disease of the vertebræ. Upon the same table, placed there presumably for lack of space, certainly not for any reason of scientific classification, was a very remarkable series of ancient Egyptian bones, exhibiting various forms of fracture. These were stated to have belonged to a people living over 2000 years ago, and reveal the fact that they were subject to much the same form of injury as those who live in the present day. They were presented by Professor D. MacAlister to the museum of the Cambridge University and were exhibited by Mr. Joseph Griffiths.

So cramped was the space afforded that even the side posts of the doorway had to be pressed into the service and here there were suspended two interesting photographs showing a somewhat unusual form of bromide eruption in an infant who had had one of the numerous patent "soothing" medicines administered to it and a case of accidental vaccination of chapped hands in a nurse whose parents had refused to have her vaccinated previously on account of "conscientious objections."

Among the rarer and more interesting of the mounted specimens, mostly prepared by means of the formalin method, were the following. A ball-thrombus in the auricle (from University College, Sheffield) from a patient who died with signs of mitral disease and many emboli, the thrombus being loose in the auricle as seen in the specimen. Syphilitic myocarditis (from University College, Sheffield) from a man who was discharged from the army on account of epilepsy, who died in a fit; the muscular substance of the heart showed the mottling. It would have been interesting in this specimen to have learned if there were any gross changes in the brain to account for the fits, or whether these were, as some maintain, due entirely to circulatory disturbance. Brown atrophy of the heart (from the Royal Free Hospital) from a case of phthisis. Thrombus in the thoracic aorta (from Westminster Hospital); the transverse part of the aortic arch and a portion of the descending aorta showed the presence of a firm clot in the lumen of the vessel. The clot reached down to the level of the diaphragm. It was taken from a body of a man, 49 years of age, who died from a large mixed-cell sarcoma of the os innominatum. There was no evidence found at the necropsy of a collateral circulation. Microscopically the clot in the aorta was mostly fibrin, but there were a few large cells of sarcomatous appearance in places. Specimen of dilated stomach produced by simple hypertrophy of the pyloric sphincter consequent on traction of a moveable kidney (exhibited by Dr. H. Bramwell, Cheltenham). Lymphangiectasis of the intestine (from the Westminster Hospital Museum). The mucosa of the duodenum and commencement of the jejunum was covered with closely-set villous processes which gave it a shaggy appearance. In the recent condition the mucous membrane was much congested though the villous projections were white. The entire intestinal tract was similarly affected. It was taken from the body of a man, aged 38 years, who had suffered for some months from intermittent attacks of diarrhœa and vomiting. Emaciation ensued and he died from exhaustion. With the exception of the intestinal condition, which affected the whole of the small intestines, the viscera were normal. Specimens of scurvy rickets (from the Westminster Hospital Museum) showing the pelvis and lower extremities of a child who died from the disease. The periosteum of the femur was stripped up from the shaft and underneath it was a blood-clot. The upper epiphysis was separated and there was a fracture at the lower end just above the epiphyseal line; blood-clot intervened between the broken ends. The changes were remarkably symmetrical on the two sides. The bones of the legs were very soft and could easily be cut with a knife. The specimens were from a male child, aged 11 months. The child was quite well until the age of five months, when he began to fail in strength and general health. The child sweated about the head, was constantly sick, and very constipated. Red sand was often found in the urine which was much increased in quantity. Two months before admission the mouth and gums became spongy and livid and there was epistaxis. Five weeks before death the ankles, feet, shoulders, legs, and wrists were swollen and painful, and the eyelids and face were puffy.

In the department of Comparative Pathology Dr. S. T. Pruen (Cheltenham) exhibited an interesting series of specimens (macroscopic and microscopic) of tuberculosis in birds and animals. As an illustration of careful observation and description the microscopic specimens of parakeratosis variegata exhibited by Dr. J. M. H. Macleod (London) may be mentioned. In general terms the descriptive catalogue had been prepared with unusual care and completeness and the various preparations were well arranged. Much credit in this respect is due to Mrs. Grace Stewart-Billings, M.P. (Cheltenham), the secretary of the Pathological Museum, and

it is greatly to be regretted that the want of space at her disposal did not enable her to do greater justice to her task.

THE ANNUAL MUSEUM.

(Continued from page 408.)

III.—SANITARY APPLIANCES, DISINFECTANTS, &c.

A quite distinct falling off in the number of sanitary exhibits was notable this year. There were scarcely any constructional sanitary appliances at all, this section being devoted for the most part to the display of disinfectants and antiseptics. Perhaps the most comprehensive assortment of disinfectants and antiseptics was shown by the Sanitas Co., Limited, of Bethnal Green, London, E. Besides a great number of preparations, including soaps, powders, and fluids, the basis of which is the well-known sanitas, many convenient appliances for aerial disinfection were shown. Amongst these may be mentioned the sulphur fumigating candles, giving a definite amount of sulphurous acid gas, the formic air purifier, and the formic sulphugator, evolving sulphurous acid gas in association with formaldehyde. A curious association is sanitas with formaldehyde and known as "formitas." Since sanitas is antiseptic and disinfectant by virtue of its oxidising properties it is difficult to see how it can be associated with advantage with a rapidly reducing agent like formaldehyde. The exhibit included an ingenious drain-tester and disinfectant fluids other than sanitas. Izal is now well known as a convenient and non-corrosive disinfectant fluid. It is prepared in many forms, notably as medical izal for medical and surgical use, as disinfectant powder, as soap, as lozenges, as "perles" for internal administration, and as lint, wool, and gauze. These exhibits were shown by Messrs. Newton Chambers and Co., Thorncliffe, Sheffield. The Ronuk Co., Limited, of 83, Upper Thames-street, London, E.C., showed specimens of wood treated with their preparations, amongst which were illustrations of the sanitary application of ronuk to the floors of hospital wards. The preparation produces an excellent polish and is undoubtedly a sanitary adjunct. Messrs. J. Defries and Sons of 147, Houndsditch, London, E., exhibited the principal forms of the Pasteur-Chamberland filter. The exhibit included also Scurfield's ventilation indicator, an apparatus for the rapid estimation of carbonic-acid gas, the equifex portable sprayers, and illustrations of the equifex disinfectors used in London, Bombay, Calcutta, and elsewhere. The Sanitary and Economic Association of Gloucester showed two ingenious appliances, both of which are the invention of a medical man. The first was a gas-stove designed to effect ventilation and at the same time not itself to contaminate the air, the second was a refrigerator and ice-storer. The Sanitary Wood-Wool Co., of 26, Thavies-inn, Holborn-circus, London, E.C., devoted the space allotted to them to the exhibition of Hartmann's patent wood-wool preparations. These included sanitary wood-wool sheets, vaccination pads, antiseptic sponges, napkins, and gonorrhœa bags. In addition to these were specimens of Hartmann's catgut, and the simplicity and convenience of Hartmann's patent arm-sling already noticed in our columns were demonstrated. The Petanelle preparations were exhibited by Messrs. Paté, Burke, and Co. of 6, Wool Exchange, Basinghall-street, London, E.C. Petanelle is a preparation of fibrous peat which is described as a natural antiseptic and deodorant: its absorbing power is remarkable and on this account it makes excellent material for surgical dressings and pads. It is also employed for accouchement-sheets, hygienic clothing, and for bedding. We have already described petanelle disinfecting powder and fluid, while petanelle foot powder is well worth mentioning in connexion with its application to the feet during excessive perspiration. The Shell brand floor-polish was exhibited by Messrs. A. H. Hamilton and Co., of 106, Elliot-street, Glasgow. This polish, it is stated, is made with pure American turpentine amongst other things, and on account of its sanitary properties is held to be particularly well adapted for the polishing of floors of hospital wards, asylums, and convalescent homes. The exhibit of the Jeyes' Sanitary Compounds Co., of 64, Cannon-street, London, E.C., differed little from their exhibit of previous years. It comprised the creolin preparations, soaps, plasters, capsules, gauze, fluids, powders, and a dentifrice.

IV.—SURGICAL INSTRUMENTS AND APPLIANCES.

There was a distinct variety of surgical appliances shown, comprising surgical instruments, x-ray apparatus, hospital outfits, operation equipments, and special wearing apparel. Messrs. Meyer and Meltzer of 71, Great Portland-street, London, W., had a small annexe devoted entirely to the exhibition of their apparatus, including for the most part furniture for the operating-theatre, ward, or consulting-room. This firm amongst other things also showed the surgical electro-motor designed by Mr. Ballance and Dr. Milligan more especially for mastoid work and suitable for general surgery. The exhibit included a number of other interesting instruments adapted to modern surgical requirements. The stall of Messrs. Down Bros., of St. Thomas's-street, London, S.E., was the centre of considerable interest, especially as it comprised a very large selection of the most recent types of surgical instruments and aseptic hospital furniture. Messrs. Southall Bros. and Barclay of Birmingham showed an interesting series of surgical dressing-cases, containing assorted dressings inclosed in cartons sterilised by a patent process. The "celtex" dressing, which is an improved Gamgee tissue, is a speciality of this firm. The exhibit included many other surgical appliances. We should also mention that this firm exhibited a number of standardised medicinal preparations and especially tinctures, of which the tincture of strophanthus is an example. It is suggested that strophanthus has hitherto been disappointing therapeutically because preparations of variable character have been used. Messrs. Weiss and Son, of 287, Oxford-street, London, W., showed a number of exhibits of special interest to surgeons. These included their special operating-table, sterilisers, cabinets for instruments, aspirators, syringes, laryngoscopes, ligatures, and every conceivable aid to surgical work. Patent appliances for the lame were the chief feature of the O'Connor Extension Co., of 2, Bloomsbury-street, London, W.C. Most of these have already been described in our columns. The O'Connor appliance is an ingenious arrangement which compensates for shortening of the leg yet enables ordinary shoes to be worn. Boots for flat-foot and for raising the toe and for paralysis were also shown. Flax and cotton lint adapted for medical and surgical use were shown by the Liverpool Lint Co. of Netherfield-road North, Liverpool. In addition to bandages, absorbent gauze tissue, and surgeons' tow, this company also showed a special material (transpirable) for ordinary clothing which is said to permit of free evaporation and not to become cold and moist even with profuse perspiration. Mr. R. Strang, of Montpellier, Cheltenham, exhibited a very ingenious pillow-holder and bed-rest, while close by Mr. W. F. Woodland, of 24, Dorset-street, Southampton, exhibited a series of improved artificial limbs the feature of which is ball ankle-joints allowing of the automatic accommodation of the foot to the ground and rotation to prevent twisting or running at the point of bearing. The Dowsing system of the treatment of rheumatism, &c., by radiant heat and light was demonstrated by representatives of the company (24, Budge-row, Cannon-street, London, E.C.). Mr. Harry W. Cox of 9, 10, 11, Cursitor-street, Chancery-lane, London, W.C., exhibited all the latest developments of x-ray apparatus, especially in its application to surgery and medicine. The new electrolytic "break" is worthy of mention as giving a perfectly steady glow and very definite shadows or pictures. This firm supplies all the appliances connected with x-ray work, and we have had some experience of the excellence of the apparatus made by this firm. The coils are wound under personal supervision to provide for effectual insulation. A very well-arranged assortment of surgical instruments and appliances was shown by Messrs. Salt and Son of 5, Cherry-street, Birmingham. Messrs. Rosenberg and Co. of 21, Southampton-row, London, W.C., exhibited their portable x-ray outfits besides a historical collection of various x-ray tubes. Messrs. Allen and Hanbury of Plough-court, Lombard-street, London, E.C., showed a number of useful surgical appliances, including aseptic instruments and caddies of surgical dressings and plasters. They showed also a new inhaler for the administration of ether and also one for use with kélène. The exhibit included the convenient and portable ozone apparatus recently described in our columns and a convenient tray for storing labels. A very ingenious automatic bed-rest was shown by the Automatic Bed-rest Co. of 1, Somers-place, Leamington. It consists of a sling and head support adjusted by pulleys attached by means of springs to the foot-frame of the bed. Special hospital bedsteads and an anti-sagging bedstead were the features of the exhibit of Messrs. John and Joseph Taunton of Belgrave Works, Birmingham. Similar appliances, the Lawson Tait spring bedsteads, were exhibited by Messrs. George Gale and

Sons, Limited, of Dominion Works, Birmingham, and by Messrs. S. P. Whitfield and Co., Limited, of Watery-lane, Birmingham. Woods' patent wire mattress was exhibited by the Longford Wire Co., of Warrington. This mattress, attached to a bedstead six feet by three feet, will carry one ton weight without injury to the mattress or bed. A very interesting series of photographs illustrating more than 30 cases of double amputation of legs and arms was shown by Mr. J. Gillingham, manufacturer of artificial limbs and surgical appliances, Chard, Somerset. Mr. N. Bletchley (89, Northgate-street, Gloucester) has devoted his attention to special construction of boots. He exhibited a number of boots adapted for various abnormal conditions and deformities.

(To be concluded.)

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of London.—In his report for the three weeks ending July 13th, Dr. W. Collingridge, the newly appointed medical officer of health, tells us that the Corporation of London have decided to adopt the voluntary notification of phthisis and to pay the usual fee of 2*s.* 6*d.* for each case notified. On the receipt of the notification the invaded house will be visited, disinfection will be offered, and a leaflet prepared by the medical officer of health, setting out the precautions to be observed, will be left. Turning to another matter we are pleased to see that a detailed inspection of the sanitary conveniences at the several railway stations, both above and below ground, has been made in the City, and defects have been found at a very large number of them. This is a very useful public service and it is to be hoped that other medical officers of health will follow this example. Our own experiences over many of the lines of England enable us to urge the necessity of this step.

Surrey County District.—The Surrey County Council have under the advice of Dr. E. C. Seaton, their medical officer of health, taken an active and useful part with regard to the water supplied in the county during 1900. More particularly was this the case with respect to the West Surrey Water Company, the water supplied by which had been the subject of complaint by two urban district councils whose districts were supplied by the said company. Briefly stated the chemical analysis gave, in the view of these two councils, unsatisfactory results. The company in question has an intake from the Thames a short distance above Walton Bridge and the area of supply is very extensive. Near the intake there are filters but no subsidence reservoirs, the water being delivered direct to the filter-beds. The filtered water is pumped to a service reservoir on St. George's Hill. The analyses made by the experts of the company were in favour of the company; those made by the Jenner Institute of Preventive Medicine were unsatisfactory. Doubtless, as Dr. Seaton suggests, the conditions of collection varied, but at the same time the strength of a chain is measured by the resistance of its weakest link. Having regard to these discrepancies Dr. Seaton, who received the assistance of the company in his inquiries, procured a sample before filtration and a sample after filtration, seeking by this means to ascertain whether the filtered water gave average results which are satisfactory at all times, and under all conditions of the river. The water was also examined bacteriologically and for this purpose 50 samples were taken. The results of this bacteriological examination were, we are told, satisfactory, but on the other hand the chemical results were unsatisfactory. It is not clear if the filtrate of each filter was submitted to examination or whether there are automatic arrangements for checking the rate of filtration of each filter. But in the meantime the company applied for Parliamentary powers to construct subsidence reservoirs and the county council were able finally to arrange terms upon which alone their opposition to the Bill would be withheld. It may therefore be said that the Surrey County Council have here performed a useful service. Other action has also been taken by this county council in reference to another water company.

Coventry Urban District.—By the provisions of the Coventry Corporation Act, 1900, power has been procured by which the corporation, having erected an abattoir, may revoke, cancel, or call in any licence granted by them, either before or after the passing of the Act, with regard to private slaughter-houses, subject to the condition that compensation to the owner shall be given. Similarly the corporation have power to close any private slaughter-house which in their opinion is injurious or dangerous to the public health. It will be interesting to note how these provisions are applied in practice.

Kingston-upon-Hull Urban District.—Dr. Wright Mason, in reporting upon the cases of small-pox which occurred at Hull during 1900, gives a brief summary of the whole outbreak. There were in all 943 cases notified with 163 deaths. There were removed to hospital 904 cases, and of these 748 were vaccinated and 156 showed "no evidence of vaccination from marks." The fatality-rate of the vaccinated was 10·2 per cent. and that of the unvaccinated was 48·7 per cent. The total fatality-rate was 16·9 per cent. 20 vaccinated children under 10 years of age were attacked, with no deaths, while of the 60 children attacked who showed no evidence of vaccination 27 died—i.e., the fatality-rate was 45 per cent.

Hastings Urban District.—Dr. Scarlyn Wilson refers in his current annual report to the practice of the "inflation," or blowing up, of the connective tissue of young animals, such as calves and lambs, immediately after death. This operation is held to improve the appearance of the meat, and there is no doubt that it imparts a fallacious idea of bulk and perhaps, too, of freshness. In other words, it must be regarded as a questionable practice. Dr. Wilson states that "inflation" is practised on ill-nourished meat by the direct lung power of the slaughterer, and certainly this proceeding should be unhesitatingly condemned. We have ourselves seen "inflation" by means of a pump. But here is another argument for public slaughter-houses where processes such as this may either be controlled or prohibited.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 5893 births and 4862 deaths were registered during the week ending August 10th. The annual rate of mortality in these towns, which had risen from 14·8 to 22·4 per 1000 in the six preceding weeks, declined again to 22·1 last week. In London the death-rate was 18·3 per 1000, while it averaged 24·3 in the 32 large provincial towns. The lowest death-rates in these towns were 11·9 in Bristol, 12·0 in Croydon, 12·1 in Wolverhampton, and 14·5 in Plymouth; the highest rates were 32·6 in Sheffield, 33·7 in Sunderland, 34·1 in Salford, and 40·6 in Gateshead. The 4862 deaths in these towns last week included 1724 which were referred to the principal zymotic diseases, against 1508 and 1755 in the two preceding weeks; of these 1436 resulted from diarrhœal diseases, 98 from measles, 71 from diphtheria, 57 from whooping-cough, 34 from "fever" (principally enteric), 27 from scarlet fever, and one from small-pox. The lowest death-rates from these diseases were recorded in Bristol, Cardiff, Swansea, and Halifax; and the highest rates in West Ham, Salford, Leeds, Sheffield, Sunderland, and Gateshead. The greatest proportional mortality from measles occurred in West Ham, Birmingham, Salford, Leeds, and Sheffield; from whooping-cough in Sunderland; and from diarrhœal diseases in Portsmouth, Manchester, Salford, Sheffield, Sunderland, and Gateshead. The 71 deaths from diphtheria included 24 in London, seven in West Ham, seven in Leeds, six in Brighton, and four in Leicester. One fatal case of small-pox was registered in London, but not one in any other of the 33 large towns; the number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 14, 11, and 13 at the end of the three preceding weeks, had declined again to 11 on Saturday, August 10th; three new cases were admitted during the week, against five, two, and four in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 3148, against 2907, 2974, and 3091 on the three preceding Saturdays; 306 new cases were admitted during the week,

against 371, 374, and 391 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 135, 134, and 126 in the three preceding weeks, rose again to 127 last week, but were 38 below the corrected average. The causes of 47, or 1·0 per cent., of the deaths in the 33 towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Cardiff, Nottingham, and in 13 other smaller towns; the largest proportions of uncertified deaths were registered in Blackburn, Sheffield, Hull, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·8 and 19·8 per 1000 in the two preceding weeks, declined again to 19·2 during the week ending August 10th, and was 2·9 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Aberdeen and 15·0 in Paisley to 20·8 in Glasgow and 30·0 in Perth. The 613 deaths in these towns included 129 from diarrhœa, 13 from measles, 12 from whooping-cough, six from "fever," five from diphtheria, and three from scarlet fever. In all, 168 deaths resulted from these principal zymotic diseases last week, against 101, 134, and 174 in the three preceding weeks. These 168 deaths were equal to an annual rate of 5·3 per 1000, which was 2·5 per 1000 less than the zymotic death-rate during the same period in the 33 large English towns. The fatal cases of diarrhœa, which had increased from 19 to 128 in the five preceding weeks, further rose last week to 129, of which 77 occurred in Glasgow, 19 in Edinburgh, 10 in Dundee, nine in Leith, five in Greenock, four in Paisley, three in Perth, and two in Aberdeen. The deaths from measles, which had been 24, 16, and 13 in the three preceding weeks, were again 13 last week, and included nine in Glasgow and two in Edinburgh. The fatal cases of whooping-cough, which had been nine and 28 in the two preceding weeks, declined again last week to 12, of which nine were registered in Glasgow and two in Edinburgh. The deaths referred to different forms of "fever," which had been 6, 3, 2, and 2 in the four preceding weeks, rose again to six last week, and included three in Dundee and two in Glasgow. The fatal cases of diphtheria, which had been two and one in the two preceding weeks, increased last week to five, of which three occurred in Edinburgh. The deaths from scarlet fever, which had been six and two in the two preceding weeks, rose again to three last week, and included two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 56 and 65 in the two preceding weeks, declined again last week to 44, and were 8 below the number in the corresponding period of last year. The causes of 23, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·6 per 1000 in each of the two preceding weeks, increased to 22·4 per 1000 during the week ending August 10th. During the past four weeks the death-rate has averaged 20·5 per 1000, the rates during the same period being 18·8 in London and 17·8 in Edinburgh. The 161 deaths of persons belonging to Dublin registered during the week under notice showed an excess of 13 over the number in the preceding week, and included 34 which were referred to the principal zymotic diseases, against 18, 26, and 32 in the three preceding weeks; of these 33 resulted from diarrhœa and one from "fever," but not one from either small-pox, measles, scarlet fever, diphtheria, or whooping cough. These 34 deaths were equal to an annual rate of 4·7 per 1000, the zymotic death-rate during the same period being 5·5 in London and 4·4 in Edinburgh. The fatal cases of diarrhœa, which had been four, 14, 20, and 23 in the four preceding weeks, further rose last week to 33. The 161 deaths in Dublin last week included 58 of children under one year of age and 30 of persons aged upwards of 60 years; the deaths of infants showed a considerable increase, while those of elderly persons were slightly below the number in the preceding week. Nine inquest cases and eight deaths from violence were registered; and 53, or more than one-fourth, of the deaths occurred in public institutions. The causes of nine, or nearly 6 per cent., of the deaths in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING JULY, 1901.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the cities and boroughs in the county of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 9·6 per 1000 of the population, provisionally estimated at 4,543,757 persons in the middle of the year. In the three preceding months the rates had been 5·2, 8·5, and 8·5 per 1000 respectively. The rates were considerably below the average in Chelsea, Battersea, Wandsworth, Greenwich, and Woolwich, while they showed the largest excess in Fulham, Holborn, Finsbury, City of London, Bethnal Green, Southwark, and Bermondsey. 22 cases of small-pox were notified last month in London; of these, seven belonged to Hackney, five to Wandsworth, three to Hammersmith, two to Paddington, and two to St. Marylebone. Nineteen small-pox patients were admitted into the Metropolitan Asylums hospitals during the month, and 13 remained under treatment on Saturday, August 3rd. The prevalence of scarlet fever showed a slight increase over that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Holborn, Finsbury, City of London, Bethnal Green, Southwark, and Bermondsey. The Metropolitan Asylums hospitals contained 3026 scarlet fever patients at the end of July, against 1491, 2291, and 2752 at the end of the three preceding months; the weekly admissions averaged 355, against 179, 339, and 343 in the three preceding months. The prevalence of diphtheria shows a further increase upon that recorded in recent months; the greatest proportional prevalence of this disease occurred in Fulham, St. Pancras, Islington, Hackney, Holborn, and Poplar. There were 1332 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of June, against 960, 1101, and 1169 at the end of the three preceding months; the weekly admissions averaged 209, against 117, 160, and 175 in the three preceding months. The prevalence of enteric fever was slightly in excess of that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Fulham, St. Marylebone, Hackney, Holborn, and the City of London. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 121, 95, and 125 at the end of the three preceding months, further increased to 166 at the end of July; the weekly admissions averaged 29 last month, against 16, 14, and 25 in the three preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Holborn, Finsbury, City of London, Bethnal Green, and Bermondsey. The 17 notified cases of puerperal fever included five in Islington, two in Kensington, two in Bethnal Green, and two in Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in the public institutions of London having been distributed among the various boroughs in which the deceased persons had previously resided. During the five weeks ending August 3rd the deaths of 7013 persons were registered, equal to an annual rate of 16·1 per 1000, against 17·6, 15·4, and 13·4 per 1000 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 9·0 in Hampstead, 10·6 in Stoke Newington, 11·1 in Lewisham, 11·5 in Greenwich, 12·0 in Wandsworth, and 12·2 in Woolwich; the highest rates were 19·1 in St. Pancras, 20·5 in Finsbury and in Southwark, 20·6 in Poplar, 21·4 in Stepney, and 25·0 in Shoreditch. During the five weeks of July, 1527 deaths were referred to the principal zymotic diseases; of these one resulted from small-pox, 236 from measles, 70 from scarlet fever, 137 from diphtheria (including membranous croup), 98 from whooping-cough, 34 from enteric fever, three from simple continued fever, and 948 from diarrhœal diseases. The lowest death-rates from these diseases occurred last month in the City of Westminster, Hampstead, Stoke Newington, the City of London, Wandsworth, and Lewisham; and the highest rates in St. Pancras, Finsbury, Shoreditch,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1901.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1901.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœal diseases.	Total.	Annual rate per 1000 persons living.			
LONDON	**4,543,737**	**22**	**2023**	**1233**	**1**	**231**	**6**	**17**	**467**	**—**	**4180**	**9·6**	**1**	**236**	**70**	**137**	**98**	**—**	**34**	**3**	**948**	**1527**	**3·5**	**7013**	**16·1**	**177**
West Districts.																										
Paddington	144,154	2	63	22	—	8	—	—	14	—	109	7·9	—	—	—	2	2	—	1	—	26	31	2·2	181	13·1	158
Kensington	176,787	—	68	46	—	9	3	2	19	—	147	8·7	—	1	—	6	2	—	—	—	32	41	2·4	231	13·6	196
Hammersmith	112,619	3	39	17	—	9	1	—	5	—	74	6·9	1	1	3	1	2	—	—	—	23	31	2·9	159	14·7	174
Fulham	136,426	—	65	65	—	20	—	—	15	—	165	12·4	—	9	2	2	2	—	2	—	20	47	3·5	208	15·7	172
Chelsea	73,879	—	23	9	—	6	—	—	1	—	39	5·5	—	—	2	—	—	—	—	—	12	14	2·0	88	12·4	130
City of Westminster	182,802	1	69	35	—	11	—	1	13	—	150	8·6	—	7	3	1	1	—	—	—	12	24	1·4	246	14·1	128
North Districts.																										
St. Marylebone	133,010	2	40	30	—	12	—	—	23	—	107	8·4	—	4	1	4	1	—	1	—	24	45	3·5	219	17·2	157
Hampstead	82,257	—	23	12	—	6	—	—	8	—	49	6·2	—	—	—	4	3	—	2	—	2	11	1·4	71	9·0	59
St. Pancras	235,297	—	96	124	—	11	—	—	18	—	249	11·0	—	13	3	13	4	—	3	—	78	114	5·1	431	19·1	238
Islington	335,325	—	113	119	—	28	—	5	35	—	300	9·3	—	15	1	16	7	—	6	—	42	87	2·7	457	14·2	151
Stoke Newington	51,328	—	16	10	—	1	—	—	6	—	33	6·7	—	1	—	—	—	—	—	—	4	5	1·0	52	10·6	98
Hackney	219,780	7	86	115	—	22	—	1	25	—	256	12·1	—	11	2	13	4	—	1	—	63	94	4·5	347	16·5	219
Central Districts.																										
Holborn	59,205	—	48	23	—	8	—	—	14	—	93	16·4	—	2	1	1	1	—	2	—	5	12	2·1	103	18·1	118
Finsbury	101,233	—	71	34	—	4	—	—	16	—	125	12·9	—	12	3	5	3	—	—	—	37	60	6·2	199	20·5	159
City of London	26,627	—	19	6	—	3	—	—	5	—	33	12·9	—	—	1	—	—	—	—	—	—	1	0·4	41	16·1	148
East Districts.																										
Shoreditch	118,564	—	51	26	—	7	—	—	15	—	109	9·6	—	14	2	6	2	—	1	—	67	92	8·1	284	25·0	324
Bethnal Green	129,700	—	102	43	1	10	—	2	28	—	186	15·0	—	6	2	1	4	—	2	1	27	43	3·5	233	18·7	164
Stepney	298,884	—	156	69	—	20	—	1	35	—	301	10·5	—	41	7	9	11	—	4	—	73	145	5·1	614	21·4	215
Poplar	168,887	—	67	76	—	10	—	—	18	—	171	10·6	—	16	2	13	4	—	2	—	64	101	6·2	333	20·6	248
South Districts.																										
Southwark	206,219	1	167	51	—	10	—	—	19	—	248	12·5	—	16	8	4	8	—	—	—	52	88	4·5	406	20·5	227
Bermondsey	130,348	—	142	44	—	8	—	—	22	—	216	17·3	—	10	8	7	3	—	1	—	15	44	3·5	232	18·6	161
Lambeth	302,460	—	126	56	—	12	2	1	31	—	228	7·9	—	10	7	5	8	—	1	2	82	115	4·0	481	16·6	169
Battersea	169,364	—	43	15	—	7	—	1	20	—	86	5·3	—	21	1	1	8	—	1	—	48	80	4·9	272	16·8	202
Wandsworth	233,943	5	54	39	—	7	—	2	18	—	125	5·6	—	10	5	3	2	—	—	—	18	38	1·7	269	12·0	170
Camberwell	259,897	—	183	86	—	6	—	1	17	—	293	11·8	—	2	4	14	3	—	1	—	43	67	2·7	324	13·4	174
Deptford	110,712	—	40	32	—	5	—	—	8	—	85	8·0	—	3	1	1	6	—	1	—	28	40	3·8	142	13·4	166
Greenwich	96,188	—	22	10	—	6	—	—	6	—	44	4·8	—	4	1	—	2	—	—	—	10	17	1·8	106	11·5	125
Lewisham	128,423	1	50	28	—	4	—	—	11	—	94	7·6	—	1	—	3	2	—	—	—	10	16	1·3	137	11·1	116
Woolwich	117,619	—	30	21	—	6	—	—	2	—	59	5·2	—	6	—	2	3	—	2	—	11	24	2·1	138	12·2	92
Port of London	—	—	1	—	—	5	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Stepney, Poplar, and Battersea. The fatal case of small-pox was that of a person belongng to Hammersmith. The 236 deaths from measles were slightly below the average number in the corresponding periods of the 10 preceding years; this disease was proportionally most fatal in Finsbury, Shoreditch, Stepney, Poplar, Southwark, and Battersea. The 70 fatal cases of scarlet fever were 15 below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Hammersmith, Finsbury, Southwark, and Bermondsey. The 137 deaths from diphtheria showed a marked decline from the average in the corresponding periods of the 10 preceding years; this disease showed the highest proportional fatality in St. Pancras, Hackney, Finsbury, Shoreditch, Poplar, Bermondsey, and Camberwell. The 98 fatal cases of whooping cough were only about one-half of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Stepney, Battersea, and Deptford. The 37 deaths referred to "fever" showed a slight decline from the average number in the corresponding periods of the 10 preceding years; the highest "fever" death-rates occurred in Fulham, Hampstead, Islington, Holborn, Bethnal Green, and Woolwich. The 948 deaths from diarrhœal diseases were slightly less than the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from these diseases was recorded in St. Pancras, Hackney, Finsbury, Shoreditch, Poplar, and Battersea. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during July was more than 28 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 177 per 1000. The lowest rates of infant mortality were recorded in Hampstead, Stoke Newington, Holborn, Greenwich, Lewisham, and Woolwich; and the highest rates in St. Pancras, Hackney, Shoreditch, Stepney, Poplar, and Southwark.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL R. W. FORD, D.S.O., is appointed Deputy Surgeon of Chelsea Hospital. Lieutenant-Colonel G. W. Brazier-Creagh, C.M.G., holds himself in readiness to embark for South Africa at an early date. Major G. J. A. Tuke has been instructed to join at Woolwich for duty. Lieutenant R. F. M. Fawcett and Lieutenant W. L. Steele have left Aldershot for service in South Africa. Surgeon (on probation) J. C. Hastings has joined at Aldershot.

The undermentioned Majors to be Lieutenant-Colonels (dated July 20th, 1901):—Arthur Mercer Davies, Henry William Hubbard, Thomas Edward Noding, John Robert Yourdi, John Chislett Culling, Robert Isaac Dalby Hackett, George Turner Trewman, Henry Halcro Johnston, Edmond Munkhouse Wilson, C.M.G., D.S.O., Edmund John Erskine Risk, William George Birrell, Michael Dundon, Charles William Stanford Magrath, Alfred Vavasour Lane, George Edward Weston, George Harrison Younge, Richard Francis O'Brien, Charles William Thiele, Frederick Peter Nichols, John McLaughlin, Francis Joseph Lambkin, William Lloyd Reade, Henry James Peard, Samuel James Rennie, John Carmichael, George Washington Brazier-Creagh, C.M.G., and Francis Tichborne Wilkinson.

Surgeon-Lieutenant-Colonel Samuel Farrant, West Somerset Regiment of Yeomanry Cavalry, has been appointed to the medical charge of troops at Taunton, vice Lieutenant-Colonel E. H. Joynt, late R.A.M.C., resigned.

VOLUNTEER CORPS.

Artillery: 1st Banff: Surgeon-Lieutenant S. Clark retires under paragraph 111 Volunteer Regulations. Dated August 10th, 1901. *Rifle:* 1st Volunteer Battalion the Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Captain F. Shann to be Surgeon-Major. Dated August 10th, 1901. 2nd Volunteer Battalion the Princess of Wales's Own (Yorkshire Regiment): Surgeon-Captain S. H. Snell resigns his commission. Dated August 10th, 1901. 1st (City of Bristol) Volunteer Battalion the Gloucestershire Regiment: Surgeon-Captain A. W. Prichard to be Surgeon-Major. Dated August 10th, 1901. 1st Volunteer Battalion the Royal Sussex Regiment: Surgeon-Captain J. Turton to be Surgeon-Major. Dated August 10th, 1901. 2nd Volunteer Battalion the York and Lancaster Regiment: John Power Shine to be Surgeon-Lieutenant. Dated August 10th, 1901. 2nd (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant J. B. Stevens to be Surgeon-Captain. Dated August 10th, 1901. 5th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Lieutenant J. P. Brown to be Surgeon-Captain. Dated August 10th, 1901.

SOUTH AFRICAN WAR NOTES.

The following have been discharged from hospital to duty:—Civil Surgeon Digby Manfold French and Civil Surgeon Thomas Caldwell.

Civil Surgeon C. R. Hodgson is on passage home in the *Aveca*.

DEATHS IN THE SERVICES.

Surgeon-General Charles Richard Francis I.M.S. (retired), at his residence, Spencer-park, London, S.W., aged 82 years. He at one time was principal and professor of medicine at the Medical College of Calcutta and examiner to the University of Calcutta. Subsequently he became secretary to the surgeon-general with the Government of India, retiring in 1875.

Inspector-General of Hospitals and Fleets, Henry C. Woods, M.V.O. (retired), late of His Majesty's yacht, has been appointed for service at the Admiralty as member of a committee on the pay and promotion of naval medical officers.

Deputy Inspector-General of Hospitals and Fleets John S. Dobbyn has been awarded the Greenwich Hospital Pension of £50 a year.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following is a list of the grants awarded by the Committee of Distribution of the Metropolitan Hospital Sunday Fund for the year 1901:—

GENERAL HOSPITALS.

Charing Cross Hospital, £1060; French Hospital, £266 13*s.* 4*d.*; German Hospital, £441 12*s.* 4*d.*; Great Northern Central Hospital, £716 13*s.* 4*d.*; Guy's Hospital, £2250; Hampstead Hospital, £200; Italian Hospital, £50; King's College Hospital, £1250; London Hospital, £4500; London Homœopathic Hospital, £458 6*s.* 8*d.*; Phillips Memorial Homœopathic Hospital, £29 3*s.* 4*d.*; London Temperance Hospital, £666 13*s.* 4*d.*; Metropolitan Hospital, £816 13*s.* 4*d.*; Mildmay Hospital, £226; Miller Hospital and Royal Kent Dispensary, £250; North-West London Hospital, £341 13*s.* 4*d.*; Poplar Hospital, £433 6*s.* 8*d.*; Queen's Jubilee Hospital, £83 6*s.* 8*d.*; Royal Free Hospital, £875; St. George's Hospital, £1937 10*s.*; SS. John and Elizabeth Hospital, £58 6*s.* 8*d.*; St. Mary's Hospital, £2000; St. Thomas's Hospital, £966 13*s.* 4*d.*; Seamen's Hospital Society, £1041 13*s.* 4*d.*; Middlesex Hospital, £1783 6*s.* 8*d.*; Tottenham Hospital, £258 6*s.* 8*d.*; University College Hospital, £1133 6*s.* 8*d.*; Walthamstow, £70 16*s.* 8*d.*; West Ham Hospital, £575; West London Hospital, £600; and Westminster Hospital, £1291 13*s.* 4*d.*

CHEST HOSPITALS.

City of London Hospital for Diseases of the Chest, £666 13*s.* 4*d.*; Hospital for Consumption, Brompton, £1583 6*s.* 8*d.*; North London Consumption Hospital, Hampstead, £456 6*s.* 8*d.*; Royal Hospital for Diseases of the Chest, City-road, £333 6*s.* 8*d.*; and Royal National Hospital for Consumption, Ventnor, £291 13*s.* 4*d.*

CHILDREN'S HOSPITALS.

Alexandra Hospital for Hip Disease, W.C., £125; Banstead Surgical Home, £20 16*s.* 8*d.*; Barnet Home Hospital, £34 3*s.* 4*d.*; Belgrave Hospital for Children, S.W., £100; Cheyne Hospital for Incurable Children, S.W., £83 6*s.* 8*d.*; East London Hospital for Children, Shadwell, E., £583 6*s.* 8*d.*; Evelina Hospital for Sick Children, Southwark, S.E., £291 13*s.* 4*d.*; Home for Incurable Children, Maida-vale, W., £66 13*s.* 4*d.*; Home for Sick Children, Sydenham, S.E., £108 6*s.* 8*d.*; Hospital for Sick Children, Great Ormond-street, W.C., £833 6*s.* 8*d.*; North-Eastern Hospital for Children, Hackney-road, N.E., £291 13*s.* 4*d.*; Paddington Green Hospital for Children, W., £241 13*s.* 4*d.*; St. Mary's Plaistow, E., £312 10*s.*; St. Monica's, Brondesbury, N.W., £87 10*s.*; Victoria Hospital for Children, King's-road, Chelsea, S.W., £433 6*s.* 8*d.*; Victoria Home, Margate, £25; and "The Vine," Sevenoaks, £33 6*s.* 8*d.*

LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C., £33 6*s.* 8*d.*; City of London Lying-in Hospital, City-road, E.C., £46 16*s.* 8*d.*; Clapham Maternity Hospital, £33 6*s.* 8*d.*; East-end Mothers' Home, £75; General Lying-in Hospital, Lambeth, S.E., £36; and Queen Charlotte's Lying-in Hospital, Marylebone-road, W., £333 6*s.* 8*d.*

HOSPITALS FOR WOMEN.

Chelsea Hospital for Women, S.W., £341 13*s.* 4*d.*; Hospital for Women, Soho-square, W., £208 6*s.* 8*d.*; Grosvenor Hospital for Women

and Children, Vincent-square, S.W., £125; New Hospital for Women, Euston-road, W.C., £233 6s. 8d.; Royal Hospital for Children and Woman, Lambeth, S.E., 208 6s. 8d.; and Samaritan Free Hospital, Lower Seymour-street, W., £433 6s. 8d.

OTHER SPECIAL HOSPITALS.

Cancer Hospital, Brompton, S.W., £500; London Fever Hospital, Islington, N., £583 6s. 8d.; Gordon Hospital for Fistula, Vauxhall-bridge-road, S.W., £22 10s.; St. Mark's Hospital for Fistula, City-road, E.C., £125; National Hospital for the Diseases of the Heart, Soho-square, W., £66 13s. 4d.; Female Lock Hospital, Harrow-road, W., £208 6s. 8d.; Hospital for Epilepsy, Paralysis, and other Diseases of the Nervous System, Regent's-park, N.W., £41 13s. 4d.; National Hospital for the Paralysed and Epileptic, W.C., deferred; West-end Hospital for Diseases of the Nervous System, £125; Central London Ophthalmic Hospital, Gray's Inn-road, W.C., £100; Royal Eye Hospital, St. George's-circus, S.E., £175; Royal London Ophthalmic Hospital, City-road, E.C., £625; Royal Westminster Ophthalmic Hospital, Charing-cross, W.C., £108 6s. 8d.; Western Ophthalmic Hospital, Marylebone-road, W., £33 6s. 8d.; City Orthopædic Hospital, Hatton-garden, E.C., £166 13s. 4d.; National Orthopædic Hospital, Great Portland-street, W., £104 3s. 4d.; Royal Orthopædic Hospital, Oxford-street, W., £100; Royal Sea-Bathing Hospital, Margate, £291 13s. 4d.; St. John's Hospital for Diseases of the Skin, £66 13s. 4d.; St. Peter's Hospital for Stone, Covent-garden, £66 13s. 4d.; Central London Throat and Ear Hospital, Gray's Inn-road, W.C., £31 13s. 4d.; London Throat Hospital, Great Portland-street, W., £25; Metropolitan Ear, Nose, and Throat Hospital, Grafton-street, W., £12 10s.; Royal Ear Hospital, Frith-street, W., £8 6s. 8d.; Dental Hospital of London, Leicester-square, W.C., £140 3s. 6d.; and National Dental Hospital, 149, Great Portland-street, W., £20 16s. 8d.

CONVALESCENT HOSPITALS.

Metropolitan Convalescent Institution, Sackville-street, W., £533 6s. 8d.; Bexhill Convalescent Home, Sackville-street, W., £516 13s. 4d.; All Saints' Convalescent Hospital, Eastbourne, £333 6s. 8d.; Ascot Priory Convalescent Home, £58 6s. 8d.; Charing-cross Hospital Convalescent Home, Limpsfield, £58 6s. 8d.; Chelsea Hospital for Women Convalescent Home, St. Leonards, £37 10s.; Deptford Medical Mission Convalescent Home, Bexhill, £20 16s. 8d.; Mrs. Gladstone Convalescent Home, Mitcham, £25; Friendly Societies' Convalescent Home, Dover, £16 13s. 4d.; Hahnemann Convalescent Home, Bournemouth, £25; Hanwell Convalescent Home, £16 13s. 4d.; Herbert Convalescent Home, Bournemouth, £16 13s. 4d.; Herne Bay Baldwin-Brown Convalescent Home, £25; Homœopathic Convalescent Home, Eastbourne, £16 13s. 4d.; King's College Hospital Convalescent Home, Hemel Hempstead, £54 3s. 4d.; Mrs. Kitto's Convalescent Home, Reigate, £58 6s. 8d.; London and Brighton Female Convalescent Home, *nil*; Mary Wardell Convalescent Home for Scarlet Fever, £75; Morley House Convalescent Home for Working Men, £175; Police Seaside Home, Brighton, £41 13s. 4d.; St. Andrew's Convalescent Hospital, Clewer, £116 13s. 4d.; St. Andrew's Convalescent Hoque, Folkestone, £208 6s. 8d.; St. John's Home for Convalescent and Crippled Children, Brighton, £75; St. Joseph's Convalescent Home, Bournemouth, £50; St. Leonards-on-Sea Convalescent Home for Poor Children, £83 6s. 8d.; St. Mary's Convalescent Home, Shortlands, £15; St. Michael's Convalescent Home, Westgate-on-Sea, £29 3s. 4d.; Seaside Convalescent Hospital, Seaford, £83 6s. 8d.; and Warley Convalescent Cottage Hospital, Essex, £8 6s. 8d.

COTTAGE HOSPITALS.

Beckenham Cottage Hospital, £45 16s. 8d.; Blackheath and Charlton Cottage Hospital, £62 10s.; Bromley, Kent, Cottage Hospital, £33 6s. 8d.; Bushey Heath Cottage Hospital, £37 10s.; Canning Town Cottage Hospital, £41 13s. 4d.; Chislehurst, Sidcup, and Cray Valley Cottage Hospital, £41 13s. 4d.; Eltham Cottage Hospital, £33 6s. 8d.; Enfield Cottage Hospital, £45 16s. 8d.; Epsom and Ewell Cottage Hospital, £54 3s. 4d.; Hounslow Cottage Hospital, £22 10s.; Livingstone Cottage Hospital, £65; Mildmay Cottage Hospital, £41 13s. 4d.; Reigate and Redhill Cottage Hospital, £66 13s. 4d.; Sidcup Cottage Hospital, £31 13s. 4d.; Tilbury (Passmore Edwards) Cottage Hospital, £33 6s. 8d.; Willesden (Passmore Edwards) Cottage Hospital, £37 10s.; Wimbledon Cottage Hospital, £33 6s. 8d.; and Woolwich and Plumstead Cottage Hospital, £29 3s. 4d.

INSTITUTIONS.

Establishment for Gentlewomen, Harley-street, £91 13s. 4d.; S. Saviour's Hospital and Nursing Home, £100; National Sanatorium for Consumption, Bournemouth, £75; Invalid Asylum, Stoke Newington, £41 13s. 4d.; Firs Home, Bournemouth, £16 13s. 4d.; St. Catherine's Home, Ventnor, £25; and Friedenheim Home for the Dying, £208 6s. 8d.

DISPENSARIES.

Battersea Provident Dispensary, £70 16s. 8d.; Bloomsbury Provident Dispensary, £10; Brixton, &c., Dispensary, £40; Brompton Provident Dispensary, £18 6s. 8d.; Camberwell Provident Dispensary, £58 6s. 8d.; Camden Provident Dispensary, £10 16s. 8d.; Chelsea, Brompton, and Belgrave Dispensary, £33 6s. 8d.; Chelsea Provident Dispensary, £10; City Dispensary, £91 13s. 4d.; City of London and East London Dispensary, £18 6s. 8d.; Clapham General and Provident Dispensary, £20; Deptford Medical Mission, £15; Eastern Dispensary, £33 6s. 8d.; East Dulwich Provident Dispensary, £26 13s. 4d.; Farringdon General Dispensary, £36 13s. 4d.; Finsbury Dispensary, £33 6s. 8d.; Forest Hill Dispensary, £31 13s. 4d.; Greenwich Provident Dispensary, £19 3s. 4d.; Hackney Provident Dispensary, £9 3s. 4d.; Hampstead Provident Dispensary, £33 6s. 8d.; Holloway and North Islington Dispensary, £33 6s. 8d.; Islington Dispensary, £41 13s. 4d.; Kensal Town Provident Dispensary, £8 6s. 8d.; Kensington Dispensary, £47 10s.; Kilburn, Maida Vale, and St. John's Wood Dispensary, £31 13s. 4d.; Kilburn Provident Medical Institution, £25; Leman-street Provident Dispensary, *nil*; London Dispensary, £12 10s.; London Medical Mission, Endell-street, £33 6s. 8d.; Margaret-street Infirmary for Consumption, *nil*; Metropolitan Dispensary, £38 6s. 8d.; Notting-hill Dispensary and Maternity (Provident), £7 10s.; Paddington Provident Dispensary, £25; Portland Town Dispensary, £14 7s. 4d.; Public Dispensary, £39 3s. 4d.; Queen Adelaide's Dispensary £16 13s. 4d.; Royal General Dispensary, £20 16s. 8d.; Royal Pimlico Provident Dispensary, £50; Royal South London Dispensary, £33 6s. 8d.; St. George's and St. James's Dispensary, £40; St. George's, Hanover-square, Provident Dispensary, £25; St. John's Wood and Portland Town Provident Dispensary, £26 13s. 4d.; St. Marylebone General Dispensary, £25; St. Pancras and Northern Dispensary, £25; South Lambeth, Stockwell, and North Brixton Dispensary, £33 6s. 8d.; Stamford Hill, Stoke Newington, &c., Dispensary, £48 6s. 8d.; Tower Hamlets Dispensary, £33 6s. 8d.; Walworth Provident Dispensary, £10; Wandsworth Common Provident Dispensary, £6 13s. 4d.; Westbourne Provident Dispensary and Maternity, £10 16s. 8d.; Western Dispensary, £46 13s. 4d.; Western General Dispensary, £104 3s. 4d.; Westminster General Dispensary, £29 3s. 4d.; Whitechapel Provident Dispensary, £19 3s. 4d.; and Woolwich Provident Dispensary, £10.

Correspondence.

"Audi alteram partem."

"WAS LUIGI CORNARO RIGHT?"

To the Editors of THE LANCET.

SIRS,—Mr. E. H. Van Someren's paper, under the above title, published in THE LANCET of August 10th, is one of great practical interest. It emphasises the harmfulness of a dietetic custom which is becoming increasingly prevalent—I refer to the practice of feeding children almost exclusively on soft pappy food. Mr. Van Someren says, in effect, that the manifold varieties of indigestion and the long array of evils which follow in their train are chiefly due to defective insalivation; that if food be properly masticated and insalivated it will pass into the stomach involuntarily and in a condition best suited to the requirements of gastric digestion; and that if this habit be persisted in for a few weeks it will be impossible for the individual to swallow food that is imperfectly insalivated owing to the development of a reflex mechanism controlling certain muscles of the mouth and throat; further, that owing to the habit of bolting food in early life the reflex in question fails to be developed. This view carries with it the assumption, which, indeed, cannot be denied, that our ancestors masticated their food more efficiently than we do ours.

Now, Sirs, how comes it that the modern human tends to bolt his food from early years? Is it because he is congenitally more prone to do so than were his ancestors? Or are we to suppose that the human has always needed to be educated in efficient mastication and that our ancestors were more thorough and persevering in this respect than we are? On neither of these assumptions can we explain the modern tendency to bolt food. This results from the fact that children are fed on soft food which can be readily swallowed without mastication—that we are, in fact, a pap-fed people. Under the head of pap we may include all food which can be swallowed with little or no preliminary mastication—such as bread-and-milk, rusks-and-milk, the numerous children's foods prepared with milk, milk puddings, potatoes and gravy, bread soaked in bacon fat, and pounded meat; these, with an occasional biscuit (variety not specified) and a thin slice of bread and butter, constitute, according to an eminent authority on children's diseases, the correct dietary for the young human from the time of weaning till the age of two years, and I am positively dismayed when I think how widely this pernicious system prevails. If asked what is the most important fact to insist on regarding the feeding of children after the teeth have appeared I should reply—Let their food be of a kind which compels them to masticate adequately, whether they like it or not. It is manifestly quite impossible to teach a child at 10 months, or even one much older than this, properly to masticate if we give it pap only.

The evils which result from this system of pap-feeding fall under two heads:—

1. Those (referred to by Mr. Van Someren) connected with the imperfect preparation of food for the stomach. Under the present system a crude mess is allowed to flop down into the stomach without any proper preparation by the mouth. Is there any wonder that a child with a sound digestion is such a rarity? So hugely, indeed, do digestive troubles loom in the pathological life of the child that it were an almost justifiable exaggeration to say that he has but one malady—indigestion. It has long been an aphorism with me: Keep a child's digestive system healthy and you keep the child healthy; and the best way to do this is to discard the use of paps and instead of casting about for the latest marvel in patent foods to give any plain food we like, provided it is of a kind which necessitates thorough mastication.

2. The second class of evils resulting from pap-feeding have reference to the imperfect use of the jaws and associated structures. Owing to this there is defective development of the jaws and their muscles, also of the teeth, tongue, and salivary glands. Let us not forget that every time the muscles of mastication contract the flow of blood and lymph in the structures of the mouth and accessory cavities, *including the naso-pharynx*, is accelerated. Pap-feeding, therefore, implies a sluggish circulation of blood and lymph in these parts. Now, "adenoid" disease is essentially a disease of pap-fed communities. I leave your readers to draw their own conclusions from these facts.

I am, Sirs, yours faithfully,

Wimpole-street, W., August 10th, 1901. HARRY CAMPBELL.

To the Editors of THE LANCET.

SIRS,—The treatise of Ludovico Cornaro, which, as reported in THE LANCET of August 10th, p. 389, was the subject of discussion at a sectional meeting of the British Medical Association, early found an English translator in George Herbert and can be examined in Warne's edition of his works. Amongst the advantages he derived from frugality Cornaro reckons immunity from malaria while serving upon an agricultural survey. "I ..... abode in ..... fenny places two whole months in the heat of summer (which in Italy is very great), receiving not any hurt or inconvenience thereby, so great is the power and efficacy of that temperance which ever accompanied me." Herbert, himself consumptive, died young, but he speaks well of what are indeed the higher pleasures of the table:—

"Besides the cleanness of sweet abstinence
Quick thoughts and motions at a small expense,
A face not fearing light;
Whereas in fulness there are sluttish fumes,
Sour exhalations, and dishonest rheums,
Revenging the delight."

I am, Sirs, yours faithfully,

Leek, August 13th, 1901. D. A. ALEXANDER.

THE RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—The papers which have appeared in this week's issue of THE LANCET bearing upon the possibility of infection with tuberculosis through the medium of milk have suggested a brief comment. It is natural that the discovery by laboratory workers of tubercle bacilli in milk should lead them to assume that milk is a frequent source of tuberculosis, and although morbid anatomists have adduced facts from the post-mortem room to show that they consider the danger from contaminated milk to have been over-estimated, few have not been prepared to admit that primary abdominal tuberculosis is a sequence of ingestion of milk containing bacilli of bovine tuberculosis. This conclusion may appear justifiable, yet it has always seemed to me that it leaves out of consideration the fact that if dust containing tubercle bacilli from the human subject is the great infecting medium for the lungs, there is no reason why it should not be the great source of infection of the intestinal tract also. One has only to walk down a back street in a poor neighbourhood and see dirty-faced infants crawling upon dirty floors, putting every object within reach into their mouths, in order to realise in some small measure how vast must be the number of bacilli of human tuberculosis which are swallowed annually by the infant population. A similar lesson may be learnt in the out-patient room. A crying infant may be seen to be comforted by its mother with an indiarubber teat, which no sooner falls on to the dusty floor than it is picked up and thrust unwiped into the infant's mouth again, a proceeding which is no doubt repeated several times during the day. Another method of infection with human tuberculosis also suggests itself. The habit a woman frequently has of putting a spoon with which an infant is being fed into her mouth, in order to taste or estimate the temperature of the food, must often lead to direct transference of tubercle bacilli to the child. Although we may exclude the possibility of infection with bovine tuberculosis there is no difficulty, as we have seen, in explaining the presence of primary abdominal tuberculosis. The wonder is that it does not occur more often.

The occurrence of tuberculosis of the skin in butchers has been used as an argument in favour of the possibility of infection with bovine tuberculosis. Such an occurrence is, however, by no means conclusive. As is well known, this disease may occasionally follow slight local injuries sustained in various occupations. I have seen tuberculosis of the skin result from a puncture by a gardener's fork and from a prick by a splinter of a deal table. As guardians of the public health it is wise that workers in the medical field should consider milk to be a possible source of tuberculous infection until it is proved to be harmless, but as scientists it is necessary that the subject should be viewed from its various aspects. Had the teachings of morbid anatomy been more carefully weighed possibly less stress would have been laid upon the findings of bacteriology.

I am, Sirs, yours faithfully,

Clifton, Bristol, August 6th, 1901. THEODORE FISHER.

To the Editors of THE LANCET.

SIRS,—The importance of the statement made by Professor Koch at the British Congress on Tuberculosis—namely, that cattle are refractory to injections of tubercle bacilli derived from man—is so great that one is justified in recording any facts which have a bearing on the subject and which may help to decide this vital question. In a series of experiments which I have been conducting for several years I had occasion to introduce tubercle bacilli derived from man into the anterior chamber of the eye of a young cow. Though the dose was not a large one, nevertheless tuberculosis resulted and the eye was converted into a large tuberculous mass in which tubercle bacilli were embedded in large numbers. This is only one case, but still it shows that cattle are not perfectly immune to this organism. That susceptible animals can have tubercle bacilli derived from man injected into the circulation or into a cavity where they are exposed to a large surface without producing tuberculosis, whereas a smaller dose introduced into a smaller area may produce the disease, is, in my opinion, possible. The experiments which no doubt are now being undertaken to prove or to condemn Professor Koch's statements will, I believe, elucidate the fact that cattle are not so susceptible to the tubercle derived from man as has hitherto been thought, but that neither are they quite refractory. Other observations made during the series of experiments referred to disagree with several of Professor Koch's statements, but as these are of somewhat secondary importance, and as I hope to embody them in a paper at an early date, I do not feel called upon to enter into them at present. I am, Sirs, yours faithfully,

Glasgow, July 29th, 1901. PETER PATERSON, M.B. Glasg.

HAY FEVER: ITS REMEDY.

To the Editors of THE LANCET.

SIRS,—Those who reside in towns are little cognisant of the abject misery for a few weeks in the early summer of some of those who live in the country, and especially in a grass-growing district as distinguished from the cultivation of crops on arable land, by reason of that ailment which goes by the name of "hay fever." Many, young and old, it quite prostrates; to others it renders life a burden while it lasts. When the physiological effect of the suprarenal capsules as a contractor of blood-vessels was first mooted I thought that I foresaw its virtue as a remedy for hay fever, though for a long time I was unable to test its action owing to the lack of a stable solution that would "keep" and be always in readiness. When, however, Messrs. Parke, Davis, and Co., with the advice of Dr. Takamine, perfected their solution of adrenal chloride, 1 in 1000, the difficulty was solved, and throughout this season many sufferers have been relieved of their burden to a marked degree.

For those who suffer from sneezing and wheezing a spray of the solution into the nostrils, 1 in 1000, daily—for its effects last many hours—or twice a day, by virtue of its contracting the distended capillaries in the nasal mucous membrane, removes these discomforts completely for a time varying in the individual and in the character of the day. The congested conjunctiva, which occasions so much annoyance by reason of the smarting and itching which prevents the close use of the eyes, is blanched in a few seconds by the application of a solution of 1 in 10,000 once or twice daily as required. The prostration is largely

overcome by the administration of quinine internally. The few cases that are not sufficiently relieved by the use of this simple remedy are capable of cure by the galvano-cautery applied to the nasal mucous membrane.

I am, Sirs, yours faithfully,

July 31st, 1901. CLEMENT DUKES.

"A SIMPLE FORM OF PUMP FOR INFLATING THE ETHER-BAG."

To the Editors of THE LANCET.

SIRS,—One naturally feels some diffidence in commenting upon the remarks of such an able anæsthetist as Mr. Edgar Willett, but I nevertheless feel that his assertion is somewhat too sweeping. To keep the bag adequately filled when the patient is well under the anæsthetic is an easy matter, but in starting the anæsthetic, say ether (without the previous use of nitrous oxide gas), in a nervous patient where the breathing is shallow and somewhat jerky, I consider a mechanical means of filling the bag would be of great service.—I am, Sirs, yours faithfully,

FREDERICK W. COLLINGWOOD,
Anæsthetist to the National Dental Hospital.

Wimpole-street, August 1st, 1901.

"BRITISH MEDICAL MEN AND GERMAN WATERING-PLACES."

To the Editors of THE LANCET.

SIRS,—I have only just read Dr. Bezly Thorne's letter in THE LANCET of July 27th, p. 228. I am gratified he thinks most medical men agree with me.

With regard to Schott's treatment, although Dr. Thorne has quoted my letter correctly he must have read it carelessly for I cannot believe Dr. Thorne can wish the profession to think his opinion is that unsuitable cases are benefited by Schott's treatment. I never ventured an opinion upon suitable cases. I am, Sirs, yours faithfully,

Manchester-square, W., August 9th, 1901. THOMAS DUTTON.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—Dr. Archdall Reid seems to challenge the existence of cases of the "inheritance of acquired characters." May I refer him to a very simple case, one which he can test for himself without much expenditure of time? The instance referred to is small and unimportant, but so much the better for the purpose in view, and is described in *Nature* of August 8th, 1901, p. 351, under the heading, "Hair on the Digits of Man." There are, I may add, many other phenomena of hair-direction in man and the lower animals which bear a Lamarckian and only a Lamarckian interpretation. I am, Sirs, yours faithfully,

Blackheath, August 10th, 1901. WALTER KIDD.

"THE COMING ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL."

To the Editors of THE LANCET.

SIRS,—I do not wish to call in question the accuracy of your reporter in reference to my answer to Dr. Brown Ritchie's question at the recent Cheltenham meeting, *re* the possibility of making the attendance of a medical man compulsory in cases of confinement,[1] but his version of my reply differs from what I meant to say. Instead of stating that I had conversed with members of "both Houses" on the subject I intended to say that from conversations with members of "both parties" in the House of Commons I was certain that such legislation would not be entertained. Thanking you in anticipation for permitting me to make this correction,—I am, Sirs, yours faithfully,

GEORGE BROWN,
Direct Representative for England and Wales on the General Medical Council.

Gibson-square, N., August 13th, 1901.

[1] THE LANCET, August 10th, 1901, p. 409.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION AND THE REPORT OF THE CONSTITUTIONAL COMMITTEE.

To the Editors of THE LANCET.

SIRS,—The report of the Constitutional Committee was submitted to, and with but slight modification adopted at, the annual meeting at Cheltenham after a brief, rapid, generally excited, and at times angry, debate, conducted with perhaps less of the *suaviter in modo* than of the *fortiter in re*. The Association is therefore committed to a radical reform of its principles but little, if anything, short of revolutionary; and although some discussion may possibly be allowed when the consequential new rules and by-laws are submitted for confirmation at a future general meeting the Cheltenham decisions must, I fear, be looked upon as final. The principal changes effected are:

1. The *unattached members*—numbering about 6000 out of the total of about 18,000—are to be compelled, *nolens volens*, to join the divisions in the area of which they reside. (Clause 5 of the report.)
2. The *annual subscription* to the Association is to be raised from 21*s.* to 25*s.*, or such greater sum, not exceeding 30*s.*, as may be fixed by the Council; and, in addition, every member will be liable for a share of the expenses of his branch or division should they exceed the total amount of the capitulation grant of 4*s.* to be made from the general funds of the Association. (Clause 20.)
3. The *system of delegation*—almost peculiar to the ordinary trades' unions—is definitely adopted; a body of delegates or representatives of the divisions, not exceeding 300 in number, is to be elected, their first-class travelling expenses are to be paid, they are to meet at the same place and time of the year as the general business and the general scientific meetings, and they are invested with most of the powers hitherto enjoyed by the ordinary members in their general meetings. (Clause 18.)

As regards the unattached members (1) it is not unlikely that many may resent so compulsory a dictum; and the enhanced cost of membership (2) may likewise lead not a few to reconsider their position in this respect. The adoption of the principle of delegation (3) is, however, a very momentous change and its effect upon the numerical strength of the Association may be still more serious. Some members, especially those connected with the public services, as the navy, the army, &c., may have scruples regarding the propriety of belonging to a society the objects and methods of which are so closely allied to those of the ordinary trades' unions, since the delegate system is foreign to other scientific and professional bodies. It may be expedient, or even necessary, for ordinary trades' unions, because the members of such have, generally, neither the time nor the means, nor perhaps the capacity, for taking part in their general meetings; but the medical profession is, as a whole, a wealthy one, and its members are intellectually well able, individually, to conduct the affairs of an Association such as the British Medical. Again, the setting up of a body of delegates or representatives—the terms in this connexion are synonymous—will to a great extent supersede the ordinary annual meeting of members, whilst it will undoubtedly tend to degrade the status of the Central Council. In my opinion this body is a superfluous and expensive machine, a cumbrous and complex duplicate, not only quite unnecessary to the requirements of the Association, but its adoption is derogatory to the position of the Association as a learned and professional society, and will tend, I fear, still further to lower its influence with the public.

I thought it very desirable that the principle of delegation should be formally discussed at the Cheltenham meeting. An amendment by me to that effect was accepted by the Council and appeared for days on the agenda printed in the Daily Journals, and I was informed by the general secretary that it would come up in the discussion upon resolution No. 2, that, namely, "approving generally the principles of the Constitutional Committee's report." Before my motion was reached, however, the discussion upon that resolution was abruptly closured, the resolution was put to the meeting at once and it was carried. Thus, no opportunity was afforded for discussing a principle which the chairman of the Constitutional Committee, Mr. Edmund Owen, in his speech proposing the reception of their report, said he thought was the "crux" of the whole matter.

I am, Sirs, yours faithfully,

JOHN INCE, M.D. St. And., Major I.M.S. (retired).

Swanley, August 11th, 1901.

"THE ELECTROLYTIC TRANSMISSION OF SULPHUR."

To the Editors of THE LANCET.

SIRS,—I read with interest Dr. F. W. Smith's contribution on "The Electrolytic Transmission of Sulphur" to THE LANCET of August 10th, p. 371. But I do not know what "the positive end of an anode" is; nor do I know the meaning of the "negative anode." I suppose the former to mean "anode" merely, and the latter "kathode." Is the experiment detailed not connected with electrical osmosis? Perhaps some one of your correspondents versed in electrical science will enlighten those of your readers who are in doubt.

I am, Sirs, yours faithfully,

August 12th, 1901. X.

"THE TIMES ARE TROUBLOUS."

To the Editors of THE LANCET.

SIRS,—Most of us will agree with your correspondent, "G. P." in his excellent diagnosis as to the causes of that wasting complaint which he calls "troublous times." He indicates its chief causes and hints at the one effectual remedy, yet he shrinks from and even deprecates its use because "he has been taught to believe that it is on the whole derogatory to us as a profession" to dispense the medicines we order. Now is that teaching true? Unfortunately, I cannot, like "G. P.," "boast my youth," and I believe in the view of the teachers of my unregenerated era, which was diametrically the opposite, and in practice have conformed thereto. I am a hardened sinner and confess to feeling no shame. If it has sunk me in the estimation of my patients they have not shown it. It certainly does not prevent them returning to me regularly for advice or from bringing other sick friends with them.

To treat disease it is surely important to see the patient regularly, perhaps frequently. To insure his doing this make him come to you for his drugs, to be continued, modified, or changed as you see fit, and do not put it in his power by giving him a prescription to go the easier and cheaper and sometimes harmful way of sending for the "mixture as before" to the druggist. What a terrible deal of useless drugging is done by weeks' or even months' use of a prescription. We can prevent all this by home dispensing; but, then, is it really derogatory? Is a man less a man? Is his opinion or advice thought to be of less worth? Is the country practitioner held in less esteem by any but the snob because his medicines are dispensed from his own surgery? Is he degraded? It is an important question worthy of careful consideration by the general practitioner of the future and not one to answer hastily. The sowing of prescriptions broadcast produces a great consumption of drugs, but it is often the advice and the supervision, rather than the drug, that are needed by the sick man. We read of an important man who, although suffering from a loathsome disease, felt it derogatory to his position to make use of a simple and agreeable cure by washing in waters inferior to his own. Did anyone think the worse of him because on further consideration he put his dignity in his pocket and washed himself and his pride clean?

I am, Sirs, yours faithfully,

August 12th, 1901. A HARDENED SINNER.

A PROPOSITION FOR THE REGENERATION OF THE ROYAL ARMY MEDICAL CORPS.

To the Editors of THE LANCET.

SIRS,—It appears to me that the position of the above department is becoming crucial. The country evidently requires a remodeled army and it must occur even to the mind of the stupidest of our combatants that to keep that army in the field *exceptionally* good medical officers are necessary. The question therefore arises, How are we to get them? The following I propose as a solution. We cannot make a clean sweep of the Royal Army Medical Corps and begin afresh but we can offer them and men willing to join now the following terms. 12 years' initial service under present conditions; during the last three years of this initial service every possible opportunity for the acquisition of scientific medical knowledge. They should during these three years pass a really high standard examination—e.g., the M.B. and B.C. examination of Cambridge. On passing this examination that they should be qualified for promotion.

Let us have a look at our medico. Now, what do we find? We find a man with 12 years' army service, with a thorough knowledge of that service and of its discipline, and beyond this an exceptionally high professional standing. Now, I say that such a man if he elects to leave the service will have no difficulty whatever in making a good practice with its attendant income. But the army and the nation sustain a loss. How, then, can they keep him? They must pay him—I do not say respect him, they do that already. Give him then from £800 to £1000 a year and rank him as surgeon first grade? What higher title? What shall we do with the men who fail to pass? Let them go on under the old warrant until they *do*, but *always*, whatever may be their age and infirmities, as subordinate to the first grade man. If the authorities will do this they will get some of the best young medical men in the country. I submit this as a rough sketch; of course, many points require elaboration. I inclose my card and remain,

Yours faithfully,

August 13th, 1901. TRUE BLUE.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Rising Plague Mortality.—The Hamilton Sub-Committee and the Indian Medical Service.

THE plague epidemic, which may be said to have been slumbering for some time, is now apparently waking up again. The mortality increases week by week; the returns made up to July 20th show 1455 cases, against 1258 in the week preceding. The development is taking place in the Bombay Presidency and the neighbouring Mysore State. The figures are: Bombay district, 1174, against 1048; Bombay city, 105, against 85; Mysore State, 129, against 97. Elsewhere the mortality is very small, Calcutta reporting 11, against 16; and the Bengal districts 7, against 2. Karachi, unfortunately, has had another case and the notification declaring it to be free has had to be cancelled. Bombay city seems to be very unfortunate. After the worst of the outbreak in the spring passed away the high mortality only slowly declined, but the death-rate never returned to normal. Now during the past week or two it has risen again and plague has recrudesced unmistakeably in the north of the island. The last returns show the week's total to have been 738 deaths from all causes, giving a rate of 47·08 per 1000. There were 101 deaths from plague.

There has been a great discussion in the lay press over the report of the "Hamilton Sub-Committee." It seems to have excited considerable opposition from the Indian Medical Service. Absorption into the Royal Army Medical Corps would leave India with no distinctive medical service and service in India would be looked upon with anything but favour. The only advantage would be the abolition of the dual control at headquarters and with it the friction between the two services. The arguments seem stronger for the whole medical service of the army in India being under the Indian Medical Service. The present discontent in, and unpopularity of, the Indian Medical Service is due to what may be termed cumulative causes. Short-handedness, causing extra work and little leave, is one. The attractions of the service have also diminished. The profits of private practice in India have been steadily diminishing, due to the turning out of a larger number of improved native practitioners who charge comparatively small fees. Government has curtailed the field of practice and has not raised the official emoluments. Government has regulated the fees which members of the Indian Medical Service are allowed to charge for medical attendance on native notables. For this there is not the slightest justification. Barristers fix their fees without let or hindrance and have taken a vast deal more out of the rich native's pocket than ever the Indian Medical Service did. Again, the privilege of private practice has been taken from four of the professors of the Lahore Medical College and the official Order now limits them to consulting work. If this innovation is to be extended the emoluments of the chairs will have to be considerably increased. At one time the Indian Medical Service was nearly level with the Civil Service, now for the above-mentioned reasons it has been left a long way behind. To

bring back the popularity of the service its strength must be increased and there must be an increase of pay, especially for those posts which were formerly the plums of the service, but which have been so seriously encroached upon of late. The biggest plums will of course go to the biggest men, but the prospects of the middle stratum must be improved also.

July 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Foul Streams.

THE condition of the rivers and streams in the neighbourhood of our towns is, of course, filthy and disgusting to sight and smell, and in the majority of cases destructive to all fish-life. "Of course," may be said, because it still seems to be thought by a large section of the people that this state of things is quite normal and that streams were intended to be used as sewers. No doubt the polluters of those in the watershed of the Mersey and Irwell would subscribe to this view of the matter, but it is pleasing to find that the Withington Urban District Council does not do so, for on August 8th the Health Committee of the council called the attention of the Mersey and Irwell Joint Committee to the pollution of Chorlton Brook and the Mersey. It was stated that the district council was quite powerless in the matter, and if the joint committee did not act no one else could. The committee gets so much dispraise for its activity that it is refreshing to hear it blamed for the want of it. The belief was expressed "that a large proportion of the pollution was due to the neglect of the Mersey and Irwell Joint Committee, and unless that body became more alive to its duties the inhabitants of the district must continue to suffer as they had suffered for the last 15 years." It is not creditable to our civilisation or our common-sense that these streams, instead of giving pleasure, should have become sickening nuisances. Just below the part of the Mersey complained of sea-trout have been taken with the rod by a well-known angler who died a few years ago. Both the Irwell and the Irk contained trout and coarse fish within living memory, the latter close under the cathedral, where now the water—so-called—is black or blue-black, like Stephens's ink, and its odour is indescribably vile if a whiff of it should unluckily be inhaled. The task of the joint committee is a heavy one, but many think that, as has been said of Lord Roberts, the war has been carried on with too much consideration for the enemy.

Poisoning by Laburnum Seeds.

Cases of poisoning by laburnum seeds are probably less frequent than they used to be, as the knowledge of their dangerous properties is now widely disseminated. But on August 11th several children picked and ate a number of seeds in the grounds of the Stalybridge and Dukinfield Bowling Club. Three were very seriously ill, but under the care of Mr. Bishop they gradually recovered. It would be well if object-lessons on the common poisonous plants were regularly given in elementary schools, more especially perhaps in the towns, as the ignorance of town children on such things is often extraordinary and so they are frequent victims.

Sewer Fatalities.

On August 10th two men were killed at Audenshaw. One of them was lowered by means of a travelling crane into a 64-feet-deep sewer to recover a saw that had fallen in, and was overcome by foul gas. Another man tried to rescue him but became unconscious and was raised to the surface with difficulty. A third man—for the most chivalrous courage is usually shown at these scenes—went down, but was also overcome. The first man was dead when he was brought up and one of the others died shortly after reaching the surface. An inquest was opened on August 12th and as usual was attended by various officials—the engineer to the Audenshaw sewerage scheme, the contractor, the law clerk to the district council, and the surveyor, who would no doubt be able to show that the deaths were quite orthodox. The widows of the two men were also present and gave evidence of identification. The coroner adjourned the inquiry, as he had been informed that the first man who went into the sewer "had fallen out of the hoppet down the sewer, a distance of 20 feet," and a post-mortem examination was therefore necessary to show whether he was killed by the fall or by the sewer-gases. Very important, no doubt, but it would be more satisfactory if such so-called accidents were prevented instead of being merely explained. In the present state of knowledge it is disgraceful and culpable in the highest degree that they are allowed to take place. It is pretty obvious that in this case no lighted candle even was used or any other means were adopted of testing for, or displacing, foul gas. Two lives were lost and a third was endangered, while two women were made widows and children fatherless in this reckless effort to recover a saw. These sewer accidents are too numerous and Manchester must acknowledge that she contributes her full share. They can be prevented; and perhaps the coroner will ascertain whether it is ignorance, imbecility, or indifference that accounts for their frequent occurrence.

Stockport and Pauper Lunatics.

The Stockport Board of Guardians cannot find places for several Lancashire lunatics now in the workhouse, as the Lancashire county asylums are reported full. There seems to be no difficulty as to Cheshire cases being received in the Cheshire county asylums. But the guardians can have their Lancashire cases accommodated in the Leicestershire asylums by paying £1 a week, as compared with the usual charge of 8*s.* 11*d.* per week, and it is proposed, therefore, to accept this arrangement and to sue the Lancashire County Council in the county court for the difference, "and so bring home to them the consequences of their neglect to increase asylum accommodation." There are two violent lunatics in the workhouse for whom the chairman said that it was absolutely necessary to find asylum accommodation, so that sending them to Leicester or elsewhere seems to be justifiable.

The Stockport Workhouse.

The Stockport Guardians are rising in rebellion against the Local Government Board. Mr. R. I. Dansey, Poor-law inspector, and Mr. A. Fuller, medical inspector to the Local Government Board, recently made an entry in the visitors' book to the effect that while the sick and imbecile patients were well cared for, the accommodation and general arrangements for nursing were inadequate and unsuitable, a new hospital being absolutely necessary. A letter was also received, dated August 10th, asking if they were in a position to submit plans for the proposed new infirmary. One of the guardians suggested that in reply they should ask for an answer to a request that they had made to be allowed to purchase six cottages for a temporary extension of accommodation, and he thought that those in weekly or daily contact with the workhouse knew more about the happiness of the inmates than two highly paid officials "one of whom had for years set himself to force or induce a majority of the guardians to build an entirely new workhouse and infirmary." This is a very old sore, and it would not be surprising if the inspectors were right and the guardians wrong. It was decided to inform the Local Government Board that the guardians were not in a position to give a definite answer just now.

August 13th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Public Health at the Eisteddfod.

THE proceedings at the National Eisteddfod are by no means confined entirely to choral competitions. At the Merthyr celebration on August 5th there was a discussion in the Cymmrodorion section upon National Health, when a paper was contributed by Dr. A. Emrys Jones of Manchester. Dr. Jones spoke in vigorous terms of the need for a sanitary conscience and described some of the deplorable conditions to be found in the small Welsh towns. Wherever, he said, the inhabitants were madly enthusiastic about party politics and talked glibly about the importance of self-government they showed little or no signs of the first essentials of the requisites of a well-governed State, and one of the qualifications of the local ruler appeared to be that he would not sanction any of the new-fangled notions of the modern sanitarian. The remedy suggested by Dr. Jones is the appointment by county councils of district medical officers of health who shall have absolute fixity of tenure in their offices, for he feared that it was only too true that those health officers who did the least were held in the highest esteem.

Action for Damages against a Medical Practitioner.

At the Glamorganshire Assizes held on August 5th, before Mr. Justice Grantham, a collier of Merthyr Tydvil sought to recover £60 11s. 10d. damages from Mr. J. L. W. Ward, J.P., a surgeon of the same town. Evidence showed that the plaintiff whilst at his work sustained a fracture of the left forearm for which he was attended by Mr. Ward. Fibrous union resulted and eventually an operation was performed by Mr. R. Jones of Liverpool. This gentleman in giving evidence stated that there was no negligence on the part of Mr. Ward. The jury interposed before the defence was finished and returned a verdict for the defendant. Judgment was given accordingly with costs.

The Vaccination Act.

From July 1st to Dec. 31st, 1900, 4440 births were registered in the city of Bristol; of these 2292 children were successfully vaccinated, 10 were insusceptible, in 120 cases there were conscientious objections, 511 died unvaccinated, in 180 cases vaccination was medically postponed, 101 removed to other districts, 331 removed to places unknown, and 895 cases were unaccounted for. In the Frome (Somerset) Union for the second six months of 1900, 230 births were registered and 160 of these were successfully vaccinated.

Phthisis in Wiltshire.

The annual report of the medical officer of health of Wiltshire (Mr. J. Tubb-Thomas) which has been recently issued shows that during 1900 285 deaths were attributed to phthisis, 119 of which were registered in urban and 166 in rural districts. 374 deaths were due to consumption and the various forms of tuberculous disease, giving a death-rate of 1·37 per 1000. The deaths from tuberculous diseases were equal to 9·42 per cent. for all causes, the rate for England and Wales for 1899 being 10·4 per cent. The report adds that the voluntary notification of consumption has been adopted in two or three districts in Wiltshire and a number of medical officers have recommended its introduction. Mr. Tubb-Thomas remarks that where voluntary notification was adopted he offered free of all expense to examine sputa for the bacillus tuberculosis from cases notified and to provide suitable outfits. He has already examined between 40 and 50 specimens of sputa.

August 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow Health Report.

DR. A. K. CHALMERS has just issued a report giving details of the health and vital statistics of the city for the years 1899 and 1900. In the statement of the death-rate figures are given to show that this has undergone a progressive decline from 24·2 per 1000 in 1881–90 to 21·9 in 1891–97 and 20·6 in 1898–1900. The number of infants dying under one year of age in 1899 was 3686, and in 1900 it was 3733, representing a mortality per 1000 born of 152 and 153 respectively. The mortality in this particular class varies widely in different districts of the city, ranging from 1 in 13 born in Hillhead and Pollokshields to 1 in 5 in Gorbals and Cowcaddens. The analysis shows that the infantile death-rate is increasing in the suburban districts, and Dr. Chalmers suggests that the greater tendency to have recourse to artificial feeding as a substitute for natural nursing may possibly be an influence helping to explain this fact. The cases of infectious disease registered during 1899 numbered 17,833, and in 1900 the total was 16,684. The deaths from the principal zymotic diseases in 1899 were 2296, and in 1900 (including seven deaths from plague and one from anthrax) they were 2277. In June, 1899, a patient was admitted to hospital with small-pox; the man had arrived in the city some 12 days previously, having travelled overland from Marseilles. He had sickened two days before admission, the disease was promptly recognised, the patient was at once sent to the hospital, and there were no secondary cases. The account of the small-pox epidemic which commenced in May, 1900, is to be issued as a special report and will present a very different picture from that just defined. The disease was introduced by a seaman in April. Though the man had small-pox in a confluent form no medical man was consulted until the end of the second week, the patient during the interval being confined to bed in a one-apartment house with one and sometimes two lodgers, and receiving visitors who appear to have been frequently of a convivial turn. That was the earliest scene in an epidemic which before the end of the year had sent 397 cases into hospital and had caused 41 deaths, these numbers being much more than doubled before the outbreak was finally checked in the spring of 1901. Some other figures of interest in the report are—6606 cases of measles in 1900, with 461 deaths; 4162 cases of scarlet fever, with 210 deaths; 540 cases of diphtheria, with 125 deaths; 1013 cases of enteric fever, with 158 deaths; and 72 cases of typhus fever, with 17 deaths. The deaths registered as due to phthisis in 1899 were 1383, and the figures for 1900 were 1418. In the chief sanitary inspector's report a full account is given of the measures of visitation, inspection, disinfection, &c., entailed by the outbreaks of plague and small-pox, and it is intimated that if the increasing demands on the department are to be met adequately there must be some additions to the staff and a re-distribution of the sanitary districts of the city.

The Eyesight of School Children.

In the general statement for 1900 recently issued by Mr. A. E. Scougal, M.A., one of His Majesty's chief inspectors for schools in Scotland, attention is drawn to a report on the examination of school children's eyes drawn up by Miss Marion Gilchrist, M.B., C.M. This report deals with the results of an examination of 588 children in two of the schools under the Govan School Board. Miss Gilchrist found that only 55·6 per cent. of the children examined had "full vision," and that of these there were only 21·4 per cent. who could be described as emmetropic, the others being more or less hypermetropic or astigmatic. Of the 44·4 per cent. of the whole who had only "partial vision," 46·3 per cent. had "less than a half of full vision," and that "nearly all" of those with partial vision complained of headaches and pain in the eyes on reading. One of the head masters, after examining the lists of names sent in by Miss Gilchrist, states the following facts: (1) the greater number of the worst cases of defective eyesight are to be found in the lower division of each standard; (2) of the children who have been kept two years in the same standard almost all those were marked "very defective" in eyesight; (3) very defective eyesight means bad spelling, poor reading, and inaccurate arithmetic; and (4) where good spectacles have been fitted there has been marked improvement in the quantity and quality of the work done. On the basis of these facts the inspector draws attention to the faulty incidence of the light which in many schools is calculated to injure the eyesight, or at least to aggravate the disabilities of children suffering from refractive errors.

Caledonian Medical Society.

The annual dinner of this society was held in Glasgow on August 9th, the chair being taken by Dr. Cameron Gillies. The toast of the evening was proposed by Sir Hector Cameron, who described the objects of the society as three in number. In the first place, it was animated by a patriotic desire to maintain and to extend the knowledge of Celtic traditions, both literary and medical; secondly, through the medium of its journal and scientific meetings the society cultivated professional culture and excellence; and thirdly, it promoted good fellowship among its members. In replying to the toast Dr. Gillies gave an account of the steps which had been taken to secure the medical lore of the Highlands from oblivion and stated that the membership of the society had now reached a total of 200. Other speakers included Dr. J. P. Tulloch (Trinidad), Dr. D. C. McVail (Glasgow), and Dr. Russell (Edinburgh).

August 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Workhouse Infirmaries.

THE duties of the medical officers of the workhouse infirmaries of Ireland have been increased and their responsibilities widened by a recent and amended order of the Local Government Board. It will be remembered that the original order of the Board in reference to the appointment of assistant officers provided that the boards of guardians should appoint all such and so many assistant officers as the Local Government Board should deem necessary. Nineteen of the boards of

guardians appealed and in last May the matter came before the judicial committee sitting in Dublin Castle. After receiving the evidence of many authorities, including the President of the Royal College of Surgeons in Ireland, Sir Francis Cruise, Sir George O'Farrell, Sir William Thomson, with others, and after a prolonged investigation, during which the Local Government Board proved beyond question the necessity for their interference with the state of things which prevailed in connexion with the nursing in many of the infirmaries, the council stated that they would advise His Excellency that the order as it stood should be disallowed, but that a rule or order making provision for better nursing was required. A new order with that as its chief object has accordingly been issued and is now in force all over Ireland. By it the medical officer is placed in control of the infirmary and nursing staff, the latter being no longer under the supervision of the matron and being subordinate to the master only for general disciplinary control. "The management of the sick wards under the guardians will be in the hands of the medical officer, to whom the guardians should look for the satisfactory condition of their infirmary and hospital."

Belfast Water Commissioners.

Dr. John Barron after a contested election has been elected a member of the Belfast Water Board. The two planks in his election platform were, first that there was no medical man on this important board, and, secondly, that in reference to the epidemic of typhoid fever he considered that it was due to the state of the subsoil, which owing to bad sanitary arrangements is permeated with the germs of the disease which after dry weather get disseminated and so give rise to epidemics of typhoid fever.

Queen's College, Belfast.

From the report of the President of Queen's College, Belfast, for 1900–1901, it appears that there was an increase in the freshmen of 16, the muster being 115, and there was, in the total number of students in all faculties, an increase of 12 over the numbers of the previous year. In the medical faculty there was an increase of 12. Reference is made to the honours gained by students and to the college equipment scheme, to which attention has been drawn several times in THE LANCET.

County Armagh Asylum.

At a meeting of the committee of management of this asylum, held on August 12th, a communication was submitted from the Local Government Board auditor stating that he would be glad to know that the members of committee who had been surcharged in respect of luncheons had agreed to pay for same and he requested to be informed when this had been done so that the amounts might be struck off.

The Local Government Board in Ireland.

There can be no doubt that the general feeling in Ireland against the Local Government Board is increasing. That body are anxious that the Bragan and Glasslough dispensary districts in Monaghan should be amalgamated, but the Monaghan Board of Guardians are resisting on the ground especially that the poor may receive proper treatment. At the meeting of the Monaghan Guardians held on August 12th, the following resolution was passed:—

That we, the Monaghan Board of Guardians, assembled in meeting, summoned by special notice to consider the amalgamation of Bragan and Glasslough dispensary districts, desire to record our most emphatic disapproval of the arbitrary action of the Local Government Board in placing an obstacle in the way when all arrangements for a final and satisfactory settlement of the question had been made by the board. As our arrangement had met with the approval of both the people of those districts and Dr. Stewart, we can come to no other conclusion but that the Local Government Board (by their letter of the 2nd inst.) desire to coerce this Board into accepting a system which, if allowed to continue, would end with disaster to the poor of those districts.

A meeting of representatives from all public bodies in Ulster is to be held in Monaghan on Oct. 26th "for the purpose of taking steps to have the powers of the Local Government Board curtailed, so that the efforts of boards of guardians and councils throughout the country can no longer be vetoed by a body of paid servants who were ignorant of the duties which the people's representatives were proud to discharge without fear or reward."

Belfast District Asylums.

On August 12th there were in the Belfast Asylum 708 inmates (337 males and 371 females), at Purdysburn 149 (109 males and 40 females), and at Ballymena annexe 61 (10 males and 51 females), making a grand total of 917 (455 males and 462 females).

Liverpool Port Sanitary Authority.

Dr. William Hanna, an old student of the Belfast Medical School, has been appointed assistant medical officer of the Port of Liverpool. Dr. Hanna, after a brilliant university career, studied at Berlin and at Cambridge, and was three years on plague duty in India, where he was engaged at the Government Research Laboratory, Bombay. He has had a thoroughly practical training in bacteriology and pathology, knowledge of which is so necessary now for public health officers.

August 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Quarantine Station at Marseilles.

I HAVE already mentioned[1] in a former letter the arrival at Marseilles of a vessel declared to have cases of plague on board. This naturally produced a feeling of alarm which has now completely subsided, and from the reports of the passengers who have undergone quarantine the public are beginning to have a better comprehension of the course of events. In the first place there appears to be a doubt as to whether the disease was really plague. Medical men of the colonial service, thoroughly acquainted with the special bacteriology of the subject, assert that the bacilli found in the patients by the medical officers of the sanitary service were not the real plague bacilli of Yersin. Moreover, it is necessary to remark that the disease attacked only the Arab stokers shipped at Djibouti and did not affect either the Europeans shipped along with them before their isolation or even the Chinese whose special liability to plague is well known. Passing to another aspect of the question the passengers have described with much bitterness the defective accommodation provided for them in the lazaret where they remained for 10 days. The buildings are handsome and large, but the internal arrangements are faulty in many respects. There are only 24 bedrooms and one general dining-room for the use of all classes of passengers. The bedrooms are not kept in good order, which is explained by the fact that there is only one female servant to attend to them. The neglect of cleanliness is the same as in all the hotels of the south of France, first-class establishments alone excepted. The supply of medicines is also insufficient; a patient suffering from diarrhœa could only obtain a little bismuth at the end of three days notwithstanding repeated requests. Although the heat was intense the passengers were supplied with ice only once in 10 days. The place would be quite inadequate for the reception of a number of persons or in the event of a serious epidemic, and it is to be hoped that this false alarm will render a service by drawing the attention of the authorities to its defects.

Hospital Ships for Fishermen.

The Société Française des Œuvres de Mer (French Seamen's Aid Society) has had two special steamers built, the *St. François d'Assise* and the *Saint Pierre*, fitted up in accordance with the latest requirements of sanitary science and used as hospital ships and centres of medical aid for the numerous fishermen who go every year either to the Banks of Newfoundland or to Iceland. These two vessels have rendered valuable services to those men who are careless as regards their health, although exposed to diseases of every kind and liable to injuries in connexion with their surroundings and their occupation. The *St. François d'Assise*, which went on its first voyage this year, has made three visits to the Banks of Newfoundland and one to the French Shore. It has been able to relieve much suffering, to pick up men lost at sea on floating wreckage, and in one week of June 25 patients from the fishing boats were provided with beds in the hospital on board. The medical officer and the chaplain went on board numerous boats, rendering aid and treating patients; they also gave their services to vessels of other nationalities, as is provided for by the regulations of the society. This vessel carries a disinfecting stove which was capable of completely disinfecting a ship of war on board of which an epidemic of measles had broken out. The *Saint*

[1] THE LANCET, July 20th, 1901, p. 163.

Pierre, which has been on the Iceland station, has had to encounter terrible storms; it is the second vessel of this name sent there by the society, the first having been lost at sea. It is safe and sound up to now, although the weather has been exceptionally bad, for as many as 147 men are reckoned as having perished this year. Apart from this great mortality due to vessels being lost it is ascertained that, thanks to the presence of the *Saint Pierre*, the sanitary conditions of the fishing fleet have this year been better than ever. The medical officer has had to perform numerous small surgical operations, some Icelanders being among the patients. At the places where the vessel puts in it is welcomed by the population and it has even been exempted from harbour dues.

The Hospital at Djibouti.

The announcement of the closing of the hospital at Djibouti has occasioned much regret. It rendered most valuable services to the numerous French ships which call at this port either entering or coming out of the Red Sea. It is true that the hospital was erected as a temporary measure and was not supported by the Government; it owed its existence to a private undertaking for the carrying out of extensive public works and had to be closed because sufficient funds could not be devoted to it; it had only been erected as temporary ambulance premises for the reception of sick workmen. Nevertheless, from its position on the track of steamers bringing home invalids from Madagascar and from the French colonies in Asia it rendered very great services. Since it has been closed patients have died on shipboard in the Red Sea who might probably have been saved if they could have been landed at Djibouti. The entire press, both medical and political, are strongly urging that the Minister for the Colonies should not only re-open the hospital but should create at the place an important sanitary centre such as the circumstances require.

Mosquitoes in Paris.

M. Blanchard has again brought this subject before the Academy of Medicine by reading a valuable report of a commission appointed to inquire into the means of freeing the city from these unwelcome visitors which become more numerous every year during the hot weather. Although the insects of this description found in Paris belong to the genus culex and are not the anopheles which conveys the malaria parasite, it is not unreasonable to suppose that members of the genus culex may transmit some infectious diseases the method of propagation of which is not yet fully explained. Moreover, although the anopheles has not yet been met with, there is no ground for asserting that it may not exist in small numbers unobserved in the predominant mass, or even that it may not come to be acclimatised in Paris some day, since it is known that this kind lives as well in cold countries as in hot. Without a doubt it has recently been found at Chantilly. Three years ago M. Mosny reported a case in point. The patient was a young girl who had never been out of Paris in her life and who was attacked, to all appearance spontaneously, with well-marked malarial symptoms. It was during the mosquito season, and a young soldier from the colonies suffering from intermittent fever had recently come to live in an adjoining portion of the same house. Among the diseases capable of being transmitted by mosquito-bites M. Blanchard enumerated malaria, yellow fever, and filariasis, and he asked if it was not now time to include leprosy in the list. The mode of transmission of this disease has always remained unknown, but numerous facts are in favour of the mosquito hypothesis. Contagion conveyed by mosquito-bites inflicted indoors at night would explain many facts which have hitherto remained incomprehensible, such as the propagation of leprosy in certain families of street-hawkers in Constantinople, families in which Zambaco Pasha has even believed that the disease must be regarded as hereditary, whilst the other inhabitants of the city escape. The circumstance that these people live together in the same neighbourhoods, taking into account also the mosquitoes in the houses, would account for the observed facts better than a hypothetical heredity would. M. Chantemesse upheld the views of M. Blanchard and quoted several illustrative instances. He cited the case of the medical men attending the leper asylum at San Remo who have never contracted leprosy although they are in very close contact with the patients whom they treat by massage of the skin. The explanation given by M. Chantemesse was that the medical men never sleep in the establishment and leave it before night comes on. He also mentioned the case of a young shepherd in the environs of Nice who contracted leprosy from having several times passed the night in a deserted hut which a leper had occupied and in which he had died. He then described the case of a young man who had spent several weeks in a visit to the same part of the country and who became leprous in consequence of relations which he had with a young girl of the place, who was not herself a leper, but there were lepers in her family, and the young man had several times passed the night in her house. The Academy, after hearing M. Blanchard's report, decided to recommend to the Government the prophylactic measures proposed therein. Their principal feature was the getting rid of the stagnant water of which there is so much in Paris, as it is a resort of the mosquitoes when laying their eggs. Of this kind are the sheets of water in the public and private gardens, various pools, the unemptied public water-carts, the reservoirs belonging to manufacturing establishments, &c. The Academy proposes that these reservoirs should be covered over and that the ponds in the public gardens should be supplied with running water; in the event of this latter precaution being impossible a little petroleum should be put on the water every fortnight from the beginning of spring to the end of autumn. Lastly, the water-carts ought to be completely emptied when they return to their yards and should not be refilled until they are going to be used. The water-carts are not to be disregarded in connexion with the breeding of mosquitoes, for the insects find in them the two conditions most favourable for their reproduction—namely, moisture and darkness. In one of these carts as many as 17,000,000 larvæ of mosquitoes have been found.

August 12th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Late Empress Frederick.

THE lamented death of the Empress Frederick recalls the sad days of the long illness of her husband the late Emperor Frederick. Although the nature of the malady to which the Empress succumbed has not been officially announced it is known that she suffered from cancer of the kidney; the medical bulletin issued two days before her death only stated that "the disease had attacked the internal organs." The illness of the Empress dated from about two years ago and is said in a daily paper to have been the sequel of an accident sustained whilst riding. The malignant growth caused severe pain with occasional exacerbations so intense that according to current report the cries of the patient could be heard for some distance. Notwithstanding her weakness she was able to take carriage exercise in the grounds of her residence at Friedrichshof until last spring, when her condition became hopeless. For the past two months morphia was administered freely. The medical attendant of the Empress was Dr. Spielhagen of Cronberg, and Professor Renvers of Berlin came frequently as a consultant. Both of these gentlemen were present at the closing scene and received the thanks of the Imperial family for their devoted services. The death of Her Majesty will be deplored by many charitable institutions which were favoured with her patronage. In Berlin she founded the Victoria House, an institution for the training of nurses and for the supply of trained nurses to hospitals and families; English methods are followed, and during the first year of its existence the nurses received their training in London hospitals until the requisite arrangements could be made in Berlin. Other institutions which owed their origin to the late Empress were the Emperor and Empress Frederick Hospital for Children, the Association for the Promotion of Domestic Hygiene (Verein für Häusliche Gesundheitspflege), and the Association for Providing Country Holidays (Ferien Colonien) for Poor Children. The *Deutsche Medicinische Wochenschrift*, after paying due tribute to the conspicuous merits of the late Empress, observes that it was by a singular fate that both husband and wife suffered from malignant diseases and that neither of them had the opportunity of benefiting by an early operation.

Alleged Discovery of Cancer Organisms.

Professor Schüller, whose preliminary announcement relative to his researches on carcinoma and syphilis has already been mentioned in THE LANCET of May 26th, 1900, p. 1551,

recently published a detailed description of his work. It will be remembered that Professor Schüller claimed to have discovered characteristic corpuscles in malignant growths. They were said to be round or oval, their size being three times that of the red blood corpuscles and their colour being golden-yellow or brownish; they had a refracting light-coloured capsule and a protoplasm of a darker tinge. These objects were found by Professor Schüller in every specimen of sarcoma and carcinoma; he also made cultures, the tissue of the growth itself being used as the culture medium; the cultures appeared as gray droplets consisting of bodies of the nature above described. The first communication, which appeared in the *Centralblatt für Bacteriologie*, was comparatively little discussed, notwithstanding the great importance of any discovery relating to the etiology of cancer, but Professor Schüller's second contribution caused a great sensation, not so much in medical circles as among the general public. The subject found its way into the daily newspapers which published articles with such headings as "The Etiology of Carcinoma," &c., interviewers made their appearance, and notwithstanding the attitude of reserve maintained by eminent men the public supposed that the question of the etiology of cancer was definitely settled. Professor Schüller's discovery has not up to the present time been verified by any other pathologist, although the details of the process followed by him are comparatively simple, and Dr. Völker of Heidelberg, assistant to Professor Czerny, has recently made a remarkable communication to the *Deutsche Medicinische Wochenschrift*. He states that although he has examined numerous specimens of cancer tissue, both fresh and preserved in alcohol, he has failed to find parasites like those described by Professor Schüller, but by accident he at last discovered what these parasites might perhaps be. A specimen on being cleared with a drop of oil of bergamot taken from a corked bottle showed the characteristic capsules in great masses, which it turned out were contained in the oil and occurred most abundantly at the bottom of the bottle. According to Dr. Völker the supposed parasites are in reality cork cells disintegrated by the oil. In a specimen sent to him by Professor Schüller he found that the alleged organisms were to all appearance identical with the cork cells, and he is therefore of opinion that these bodies have nothing to do with cancer, but are derived from an accidental admixture with the oil used in the preparation of the specimen. It will be interesting to know what answer Professor Schüller will make.

Professor Koch's Views on Tuberculosis.

The *Berliner Korrespondenz*, one of the official organs of the Government, in a reference to the British Congress on Tuberculosis, states that Professor Koch explained his views a few weeks ago before a commission at the Imperial Health Office, and that it was resolved that the experiments should be continued on some of the larger animals, such as cattle, pigs, and sheep, the expense being borne by the Government. Meanwhile, till the experiments are concluded, the official paper goes on to say, the public are advised to continue to sterilise milk by the application of heat and not to relax any of the precautions which have hitherto been recommended.

August 12th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Bellevue Hospital.

THE scandals which have occurred at Bellevue Hospital during the past year and the publicity given to these in the medical and lay press have had the good effect of drawing the attention of the citizens of New York to the management and construction of its public hospitals and especially to the most important—Bellevue. The State Board of Charities at its monthly meeting on July 10th recommended the abandonment of the present Bellevue Hospital buildings and the construction of new and modern buildings. That this recommendation is well warranted by the circumstances of the case will be better appreciated when it is said that the present main building of Bellevue was built 100 years ago for an almshouse. The greater portion of the other hospital buildings is inconveniently situated and ill-adapted to the work carried on therein. The board adopted the following resolutions:—

Whereas the State Board of Charities, having in view the fact that the demands upon Bellevue Hospital are greater than upon any other hospital in this country, and its frequent and thorough inspections having convinced the board that the main buildings of the said hospital are too old and ill-adapted to their purposes to be sufficient to meet the proper demands of the service, and being also convinced that the only remedy for present conditions is in a new hospital, it is therefore resolved that the authorities of the City of New York are hereby urged favourably to consider the subject of a new and modern hospital to take the place of Bellevue as soon as possible. It is further resolved that in the opinion of this board the compensation of attendants and other employés in Bellevue Hospital should be reasonably increased so as to secure the services of competent and satisfactory employés, and that suitable provision should also be made for their care in order that the services of such competent and satisfactory help may be retained.

It has long been notorious that, in addition to the antiquity, incongruity, and inconvenience of the buildings constituting Bellevue Hospital, the accommodation is wofully insufficient. Last year 25,000 patients were treated in the institution, this being 3000 more than in all the other large hospitals combined. It is consequently to be hoped that the city authorities may see fit to give ear to, and to adopt, the recommendations of the State Board of Charities, and that a public hospital may be erected more in keeping with the wealth and intelligence of the citizens of New York than the present ramshackle pile known as Bellevue Hospital.

Craig Colony for Epileptics.

The annual report of this useful institution has just been published and shows that the system suggested by Dr. Frederick Peterson has fully answered the anticipations of its founders. Dr. Frederick Peterson first mentioned the colony system in America in an article which he published in the *New York Medical Record* in 1887. After the appearance of Dr. Peterson's article, the State Charities Aid Association took up the matter, this example being followed by the State Board of Charities. By the aid of this influential backing a Bill was introduced into the legislature of New York State and after some delay it was passed and was signed by the Governor. The report for the past year tells of the rapid and satisfactory progress which the colony has made; there was an increase of 340 admissions during the year. In the same period there were 106 discharges, deaths, or transfers to other institutions, some of the colonists being insane, some of them not fit subjects mentally for the colony. The death-rate was low. A very large number of colonists were improved to the extent that they were able to return to their own homes and to take up some vocation. A point of particular interest in the report is the susceptibility to tuberculosis evinced by the inhabitants of the colony. Out of 612 colonists there are now 36 patients suffering from tuberculosis. The proposal is made to erect perfectly plain wooden houses, a single storey in height, with plenty of glass in them, with large steam-heated sun rooms and plenty of ventilation, for the effective isolation of those suffering from pulmonary affections. It is further proposed that these buildings should be made so plain and inexpensive that in 12 or 15 years, or as soon as they become saturated with disease germs, they may be destroyed and others may be constructed. A complete pathological and chemical laboratory is also to be established and equipped for the purpose of investigating the pathology and etiology of epilepsy. The objects for which the colony was founded are stated in the report to be as follows. 1. To treat epilepsy by all the best means known to science and to cure the epileptic if possible. 2. To be a home always for those who cannot be cured, or as long as they require it. 3. To educate in a practical, useful, and simple way all those who seek its benefits, so that they may be able to help themselves. These results have been already so successfully attained that the *raison d'être* of the colony has been plainly demonstrated.

The Leper Question in the United States.

A commission consisting of Surgeon J. H. White and Assistant Surgeon G. Vanghan and Assistant Surgeon M. J. Rosenau has been working under the direction of the Surgeon-General of the Marine Hospital Service since 1899 making an investigation of the extent to which leprosy prevails in America. Although the Surgeon-General is not yet ready to publish the results of this enumeration sufficient evidence has been collected to point to the existence of at least 1000 cases of leprosy in the United States, mostly among immigrants, and enough to warrant strong recommendations for their segregation. It is

said that there are 100 cases, probably more, in New Orleans; in New York seven cases have been reported, in San Francisco 15, and in Chicago three. Dr. Albert S. Ashmead of New York takes a much more serious view of the situation and is of the opinion that leprosy is unquestionably spreading in the United States, and that 5000 is a conservative estimate of the number of persons suffering from the disease in the country. It is thought that the commissioners will almost certainly recommend to Congress, in their preliminary report to be published in December, that national lazarettos should be established in several parts of the country. The commissioners, however, take the view that notwithstanding the widespread distribution of leprosy in the United States and the increase of the disease within the past few years, there is but small cause for alarm. They declare themselves convinced that the malady is neither so deadly nor so readily communicated by contagion or infection or association as tuberculosis. Dr. Ashmead, on the other hand, believes that it may be communicated by physical contact. The relative contagiousness of leprosy is, however, still a moot point; that it is so to a certain degree is generally acknowledged and the plan proposed by the United States Commission should, it would seem, act as an effective check to its spread.

August 6th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Outbreak of Small-pox.

THE outbreak of small-pox introduced into the Southern States by the R.M.S. *Ormuz* is gradually declining. The patient who contracted the disease at Perth after boarding the vessel died, as did a passenger from Perth to Adelaide who contracted it on the voyage. A niece of this patient who attended him, although successfully vaccinated, has been severely attacked. There are still 40 people quarantined at Adelaide and these *détenus* are getting up a petition to the Government pointing out what they consider glaring instances of mal-administration on the part of the Health Department. They allege that an inspector of the department was sent to Torrens Island (the quarantine station) to superintend the interment of the fatal case. He returned without taking any precautions against infection, while the officiating clergyman and undertaker had to be disinfected and fumigated. Two of the caterer's employés have been released from quarantine before they had undergone the full period, and although in actual contact with the fatal case; and another person was released on the ground that his mother had suffered from small-pox. Two of the nurses at the Torrens Island quarantine station have contracted the disease. At Melbourne a passenger from Fremantle who was infected on the voyage has died and the body was cremated. In Sydney a quarantined passenger on the *Ormuz* refused several times to be vaccinated and has been attacked by small-pox. Owing to the occurrence of this case 20 days after the last case was reported the Health Department is considering the advisability of detaining the persons still in quarantine for further periods. The practice hitherto has been to allow successfully vaccinated persons to be released at the end of 15 days from the date of the last recorded case, and those unsuccessfully vaccinated, or refusing to undergo the operation, at the expiration of 21 days. In some cases, however, persons coming under the second category have been released at the expiration of 15 days. This will not be permitted in future, and the 50 persons still in quarantine will be kept there for a further term of 21 days. A patient who contracted small-pox in Sydney has died. The Health Department of New South Wales report having satisfactorily established the connexion between the cases that arrived by the s.s. *Chingta* and those which occurred at North Sydney, thus removing the fear that the disease had got an independent hold in the city. In Queensland no cases have occurred and a proclamation has been issued directing persons crossing the border to undergo examination by the health officer and to furnish their names and addresses.

The Plague.

Two further cases of plague—one fatal—have occurred in Brisbane. It is over a month since a case occurred in any of the other states, and the Board of Public Health in Victoria has removed the restrictions on inter-state shipping in connexion with plague. The medical inspection will be dispensed with and the bathing regulations will not be enforced. The restrictions on shipping from plague-infected over-sea ports will be maintained. The Board will continue its policy of rat-destruction.

Plans of the Proposed Hospital for North Sydney.

Competitive designs for the new hospital for North Sydney were invited by the committee and the first premium of £100 has been awarded to Mr. A. E. Shervey. The complete design provides for a hospital containing 200 beds arranged in 13 blocks, with ample accessory accommodation, at a cost of £50,000. It is proposed to erect a portion containing 48 beds for £10,000, including two main wards, on the pavilion plan, each containing 20 beds, two isolation wards, and an infectious ward of four beds, with administration block, operating theatre, and mortuary. The buildings are to be in brick, with stone dressings in Renaissance style, fireproof, and the walls finished with Keen's cement. Ventilation is to be by the Tobin system, with an exhaust fan to carry all vitiated air through ventilators in sanitary towers placed over each building. The pavilions are on an axial line bearing north north-east, so that all sides will have the sun, and are also arranged so as to provide for economy in administration.

Private Hospitals.

Few cities are so amply provided with private hospitals as is Melbourne in proportion to population. There are nearly a dozen in the city itself kept by nurses, while five others are owned and conducted by surgeons themselves exclusively for their own patients. In many of the suburbs also there is a private hospital, generally carried on by a nurse, sometimes by a medical man. The Board of Health has been considering the advisability of regulating these establishments more stringently, and a comprehensive code was recently drawn up, though it has not yet been formally adopted. The regulations refer chiefly to the provision of means of escape in case of fire and the construction of the buildings.

A Second Officer of Health for Sydney.

It has been recommended that a second officer of health should be appointed in Sydney, and it is likely to be carried into effect, and that Dr. F. Stokes, D.P.H., will be appointed. Dr. Stokes is a graduate of Sydney University who has recently returned from England, where he made sanitary science a special study.

The Australian Natives' Association and the Medical Profession in New South Wales.

At the first annual conference of the New South Wales Australian Natives' Association, held in Sydney, a motion was carried to the effect that the various friendly societies should be communicated with and asked to join the association in issuing a circular to Members of Parliament requesting them to support future legislation dealing with the *compulsory* consultation of medical practitioners. This resolution was the outcome of the refusal of the New South Wales branch of the British Medical Association to conform to certain requests of the Australian Natives' Association.

Medical Students' Fees at Melbourne.

At a recent meeting of the Council of the Melbourne University a letter was read from the Medical Students' Society drawing the attention of the Council to the fact that the cost of medical education at the Melbourne University was now £20 more than that at Sydney University, and requesting that it might be diminished. It was pointed out that the increase was due to the action of the committee of the Melbourne Hospital in raising the fees there from £5 5*s.* for the whole course to £5 5*s.* a year. It was finally decided to invite the president of the hospital to join a deputation from the council of the university to the Chief Secretary to see if the matter could not be adjusted.

Peculiar Suicide of a Medical Man.

On June 24th a medical practitioner named Thomas Henry O'Reilly committed suicide in an unusual manner—viz., by opening his femoral artery with the point of a safety-pin and bleeding to death. Dr. O'Reilly had been practising at Huntley, near Christchurch, New Zealand, and then travelled for a time as medical attendant to a patient of unsound mind. He then began to suffer from depression of mind and mental symptoms similar to those of his patient and came to Sydney for the benefit of his health. While staying at the

Metropole Hotel he was found with a rifle pointed at his heart and his toe on the trigger and he voluntarily said that it would be well if he were placed under restraint. He was accordingly taken to the police-station and during the night committed the act mentioned.

Serious Charge against a Medical Man.

On June 14th Frederick William Marshall, a medical practitioner residing in Sydney, was committed for trial on a charge of procuring criminal abortion. He had been attending a girl who was subsequently admitted to the Prince Alfred Hospital with septic peritonitis after an abortion, and who, though she eventually recovered, when in a serious condition made a dying deposition concerning Dr. Marshall and identified him when he was brought to her bedside.

Treatment of Cancer.

In the *Intercolonial Medical Journal* for June is a paper by Mr. J. H. Webb on the Nature and Treatment of Cancer which contains some novel suggestions. He regards cancer as due to chemical changes in glandular secretions which control the proliferation of cells, just as myxœdema is regulated by the thyroid secretion. The gland secretion chiefly at fault in cancer, Mr. Webb maintains, is bile, and the constituent of the bile that is wanting is soap, which holds cholesterin in solution. He therefore advises the use of soap, injected hypodermically near the disease, and also administers thyroid gland extract, which he maintains affects the fibre constituent of cancer as the soap affects the cells.

Antidotes to Cyanide Poisoning.

In the same number of the *Intercolonial Medical Journal* is an interesting communication containing the results of a number of careful experiments conducted at the Physiological Laboratory of the Melbourne University by Dr. C. J. Martin and Mr. R. A. O'Brien, to determine the value of peroxide of hydrogen, chloride of cobalt, and ferrous hydrate as antidotes in poisoning by cyanide of potassium. They conclude that while peroxide of hydrogen completely destroys prussic acid in time it is essentially a slow reaction, and fails for this reason as an antidote, which must act rapidly. Cobalt salts dispose of the prussic acid instantaneously, and in the presence of such amounts of hydrochloric acid as occur in the gastric contents, but the cobalt salts are themselves poisonous, and in order to ensure rapid conversion of potassium cyanide into insoluble cobalt cyanide a considerable excess of cobalt chloride must be taken, enough to produce dangerous or even fatal symptoms. Ferrous salts administered with sufficient alkali are as efficacious as cobalt salts, but possess two disadvantages—the difficulty of keeping them in solution and the absolute necessity of neutralising the acidity of the stomach contents. This can best be effected by the simultaneous administration of magnesium oxide. It is suggested that in mines and places where cyanide is used and opportunities for accidental poisoning occur the necessary antidotes should be kept ready, and the following are recommended: (1) one ounce of 23 per cent. solution of ferrous sulphate; (2) one ounce of 5 per cent. solution of caustic potash, in hermetically sealed tubes, which can be broken into a receptacle; and (3) 30 grains of powdered magnesium oxide, to be added to above in half a pint of water.

July 4th.

Obituary.

RICHARD CHARLES SHETTLE, M.D. ST. AND., M.R.C.S. ENG., L.S.A. LOND.

DR. SHETTLE died at his residence, Carlton Lodge, Nailsworth, Gloucestershire, on July 21st, aged 77 years. He received his medical education at St. George's Hospital and qualified M.R.C.S. Eng. in 1846 and L.S.A. in 1847. He then became house surgeon at the Dorset County Hospital, eventually entering into general practice at Donhead, Wiltshire, when he was appointed medical officer to the Tisbury Union; subsequently he removed to Cann, near Shaftesbury, Dorsetshire. In 1858 he obtained the M.D. of St. Andrews University and wishing to relinquish general practice and to devote more time to scientific pursuits he, on the death of Dr. Cowan in 1868, removed to Reading and was appointed physician to the Royal Berkshire Hospital. Subsequently he was appointed medical referee to the National Hospital for Consumption at Ventnor, consulting physician to the Midland Counties Home for Incurables, the Berkshire Friendly Societies, and the Reading Dispensary. He was for some time President of the Reading Pathological Society and besides reading many papers on clinical and pathological subjects before this society contributed papers on the Pathology of Insanity, and Hypnotism, its Nature and its Cause, and whilst conscientiously meeting the claims of patients he experimented much and continuously in the field of electricity and magnetism. His earliest paper, on Electricity as the Principle causing the Vitality and Coagulating Property of the Blood, was written when in general practice and was published in THE LANCET of August 29th (p. 244) and Sept. 12th (p. 304), 1863. From the numerous papers that he published on this subject mention may be made of Experiments showing the Paramagnetic Condition of Arterial Blood as compared with the Diamagnetic Condition of Venous Blood and a New Method of Investigating the Magnetic Lines of Force in Magnets, both being read before the Royal Society and published in its proceedings, and of several letters on the Physiology of Death by Electric Shock, published in THE LANCET of Sept. 14th (p. 694), 28th, (p. 809), and Nov. 23rd (p. 1323), 1895. He also read a paper on the Cattle Murrain before the British Association in 1865. Besides his professional and scientific work he found time for other pursuits and was elected chairman of the Reading School of Science and Art on the death of Dr. Wells, and he took much interest in the founding of the Reading College (of which body he was a governor), contributing liberally to its physical laboratory. He was also a life member of the Victorian Institute and Physical Society of London. He was deeply religious and was highly esteemed by all, and his kind and courteous manner combined with his simple and honourable ways endeared him to all with whom he came into contact. On retiring from practice in 1896 Dr. Shettle was made consulting physician to the Royal Berkshire Hospital, honorary member of the Reading Pathological Society, and was presented by the members of the medical and surgical staff of the hospital at a farewell dinner given by Mr. Oliver Maurice, then senior surgeon, with a pair of silver candlesticks.

He was twice married, and had by his first wife two daughters, one of whom predeceased him; the surviving one is married to the Rev. F. T. Colson, M.A., vicar of St. John's Church, Reading. The funeral took place at Nailsworth, the remains being interred at Amberly. Several people journeyed from Reading to do the last honour and the staff of the hospital sent a wreath. On his death becoming known the flag at the hospital was placed at half mast and remained so until after the funeral.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board at the July quarterly meeting of the examiners in the subjects indicated:—

Chemistry.—John Henry Dyke Ackland, St. Thomas's Hospital; Evelyn A. Wentworth Alleyne, St. Mary's Hospital; Hugh Lowrie Askham, Middlesex Hospital; John Staines Austin, Birmingham University; Edward James Balchin, Birkbeck Institute and St. Bartholomew's Hospital; Harold Edward Battle, Yorkshire College, Leeds; Cecil Bennett, St. Thomas's Hospital; John Boldero, St. George's Hospital; Alfred Henry Arthur Bright, Genoa University and Charing-cross Hospital; Ronald Anderson Bryden, St. Mary's Hospital; Durie Avery Chamberlain, Cambridge University and London Hospital; Horace Charles Colyer, Birkbeck Institute; Eric Abdy Collins and Reginald Branch Dawson, Guy's Hospital; Walter Emory Davies, Owens College, Manchester; Arthur Hubert Davis, St. George's Hospital; Alexander Collingwood Dickson, Cambridge University, Guy's Hospital and Birkbeck Institute; Edmund Michael Dolan, Yorkshire College, Leeds; William Cope Doughty, University College, London; Herbert James Duake, St. Mary's Hospital; Thomas Hugh Edey, Guy's Hospital and Birkbeck Institute; Archibald Finlay and John Eugene Foreman, London Hospital; Stanley Rider Gibbs, St. Thomas's Hospital; James Glenny Gibb, Charles George Grey, and Willoughby Henwood Harvey, St. Bartholomew's Hospital; William Harrison, University College, Sheffield; Robert Norman Hartley, Owens College, Manchester; Thomas Reginald Harvey, Guy's Hospital; Frederick

Duke Gwynne Howell, St. Thomas's Hospital; Roderick Jackson, University College, Liverpool; Robert Lecky, University College, Bristol; Alfred Vernon Ledger, Guy's Hospital; James Johnson Louwrens, St. Mary's Hospital; John Ross Lloyd, Carlos Bernabel Mora, and William Stewart Nealor, St. Bartholomew's Hospital; Brian Bentley Metcalfe and Henry Hamlyn Moyle, Guy's Hospital; Clayton Conyers Morrell, University College, Liverpool; Richard Denis Neagle, University College, Cardiff, and St. Mary's Hospital; Henry Sandford Ollerhead, St. Mary's Hospital; Jeffery Wimperis Parker, University College of South Wales, Cardiff; Robert Elliot Pitts, Middlesex Hospital; Horace J. D'Arcy Gerrard Price, Birmingham University; Stanislaus Reader, Stonyhurst College, Staffs; Edward Ebenezer Rendle, Guy's Hospital; Felix Stephens Rood, University College, London; Sidney John Rowntree, Birkbeck Institute; John Walter Lennox Scott and Frank Montague Wilson South, Westminster Hospital; Ernest Henry Shaw, St. Bartholomew's Hospital; Hugh Godwin Sherren, London Hospital; Albert Shepperd and Reginald Willan, Guy's Hospital; Charles Ward, Middlesex Hospital; Arthur Christopher Watkin, University College, Aberystwith; Edmund Stanley Whitcombe, Birmingham University; Francis Hugh Ponghill Willis, St. Mary's Hospital; and James Montagu Wyatt, St. Thomas's Hospital.

Pharmacy.—Leonard Ernest Acomb, University College of South Wales, Cardiff; Hugh William Acton, Middlesex Hospital; James Adler and George Bever, London Hospital; Arthur Keith Armstrong, Richard Charles Palmer Berryman and Rowland Alessandro Bowling, St. Bartholomew's Hospital; Thomas St. John Barry and Lawrence Twemlow Booth, University College, Liverpool; Hugh George William Beckett, St. Mary's Hospital; Samuel Landor Benton and John Henry Douglas Bolton, University College, London; Frank Gower Bergin, University College, Bristol; Frederick John Chanter Blackmore, University College, Sheffield; Frederick Richard Bray and Percy Horace Bryant, private study; Albert John Knowles Brayton, Owens College, Manchester, and University College, Liverpool; Wilfrid Buchanan Burr and Edward Cecil Clements, Middlesex Hospital; Sydney Carter and David Kirkpatrick Coutts, St. Thomas's Hospital; Edward Postle Gwyn Causton, Cambridge University and St. Mary's Hospital; Clifford Pendrill Charles and William Rex Collingridge, St. Bartholomew's Hospital; Cyril Thomas Cheatle, King's College, London; John Clarke, University College, Sheffield; Vivyan Colmer and Hugh Rose Cran, London Hospital; James Copland, University College, London; Charles Corfield, University College, Bristol; Edward John Crew, Guy's Hospital; Harold S. Cassan Darbyshire, University College, Sheffield; Walter C. C. Cornwallis Davies and Ernest Montefiore De Willon, St. Mary's Hospital; Percival Alfred Dingle, St. Bartholomew's Hospital; Alfred Dinnis, Charing-cross Hospital; Edmund Michael Nolan, Yorkshire College, Leeds; Bernard Mainwaring Dunstan, St. Thomas's Hospital; Frank Rowe Edmonds, University College, London; George Tatham Davison Elder, Cambridge University and St. Mary's Hospital; Thomas John Carey Evans and Thomas Llewellyn Evans, University College of South Wales, Cardiff; George John Eady, Christopher Elliott, Richard Vernon Favell, Charles Henry Fernie, and William Edward Lindsey Fowler, St. Bartholomew's Hospital; George Edward Fritche, Middlesex Hospital; Charles Frederick Fraser and Arthur William Gater, Guy's Hospital; Lawrence George Gibson, London Hospital; Cecil Irving Graham, St. Mary's Hospital; Henry Edwards Griffiths, University College of South Wales, Cardiff; Hugh Evelyn Gotelee and Langton Fuller Hanbury, St. Thomas's Hospital; James Glenny Gibb, Leonard Gray, John Purser Griffin, and Edward William Dacre Hardy, St. Bartholomew's Hospital; Albert Oliver Macarius Heslop, private study; James Gilkinson Higgins, Glasgow University; Sidney Ernest Holden and Herbert Vawser Humphry, University College, London; William George Hopkins, St. Mary's Hospital; Adrian Russell Fortescue Hubbard, Charing-cross Hospital; Henry Roscoe Ibbotson, Yorkshire College, Leeds; Harold Jacques, London Hospital; William Warwick James, Middlesex Hospital; Aneurin Ernest Jenkins and Thomas Jones Jenkins, University College of South Wales, Cardiff; Thomas Alfred Killby and Henry John Sullings Kimbell, St. Bartholomew's Hospital; George Johnson Langley, St. Thomas's Hospital; Alan Arthur Hinds Lawrence, Cambridge University and University College, London; Arthur Edward Leapingwell, St. Mary's Hospital; William Sherwood Livock and Arthur Harkness MacDonald, London Hospital; Conrad Loddiges, Walter Gerald Loughborough, James Eustace Radclyffe McDonagh and Reginald Charles Pattison McDonagh, St. Bartholomew's Hospital; Walter St. Claire McClure, University College, Sheffield; Frank Derecourt Martyn, Westminster Hospital; George Boly Messenger, University College, Liverpool; John Henry Napper, King's College, London; Reginald Cavan Neil, University College, London; Lionel Edward Close Norbury, St. Thomas's Hospital; Douglas Catterall Leyland Orton, Owens College, Manchester; Jeffery Wimperis Parker and Charles Robert Mower Peaty, University College of South Wales, Cardiff; Richard Meynell Pearson, private study; Henry Mallock Prins, University College, London; Philip Alfred Reckless, University College, Sheffield; Edmund Arthur Roberts, King's College, London; Frederick Emilius Roberts, St. George's Hospital; Ralph Raby and Charles Gibbons Seymour, St. Thomas's Hospital; Arthur George Lawrence Reade, Alexander Alfred Smith, and Thomas Stordy, Charing-cross Hospital; Stuart MacKenzie Saunders, private study; Ernest Henry Shaw, St. Bartholomew's Hospital; Armstrong Smith, Middlesex Hospital; James Herbert Sutcliffe, Yorkshire College, Leeds; Nicholas Tarr, St. George's Hospital; George Stanley Thompson, St. Mary's Hospital; George Stiebel Totesan, University College, London; Joseph Frederick Trewby and John Ronald Rigden Trist, St. Bartholomew's Hospital; Henry Strawson Turner, Amyas F. Pearson Warleigh and William Wynne Williams, King's College, London; Henry Cecil Waldo, University College, Bristol, and St. Bartholomew's Hospital; Cuthbert Gerald Welch and Arthur George Wells, University College, London; John Arthur West, Cyril Oswald Oxford Williams, Everard Lister Wright, Harold Nairne Wright, and Alexander Chamier Wroughton, St. Bartholomew's Hospital; Charles Wheen and David Wilson, St. Thomas's Hospital; Alfred Gurth Whitaker, Charing-cross Hospital; Merwyn Turberville Whitehouse, Birmingham University; Fielding Charles Whitmore, Guy's Hospital, Bristol, and Dublin; and Archibald Paterson Wright, Glasgow and Charing-cross Hospital.

Elementary Biology.—John Aspinall, London Hospital; Edward James Balchin, and George Herbert Curtis, Birkbeck Institute; George Chaikin, University College, Sheffield; Lawrence Drew Ching and Malcolm Robert Coalbank, St. Bartholomew's Hospital; Bevil Molesworth Collard, London Hospital; Eric Ably Collins, Guy's Hospital; William Cope Doughty, University College, London; Frans Gustaf Edholm, Birkbeck Institute; Thomas Llewellyn Evans, University College of South Wales, Cardiff; Archibald Finlay, London Hospital; John Vere Foster, Birmingham University; Charles George Grey, St. Bartholomew's Hospital; William Harrison, University College, Sheffield; Robert Grey Gillies and Edgar Joseph, Birkbeck Institute; Maurice Aloysius Kenny, Yorkshire College, Leeds; Edward Westcott King, St. Thomas's Hospital; John Alfred Laughton, Charing-cross Hospital; Septimus Joseph Lee, Middlesex Hospital and City of London College; James Charles Robert Lind, University College, London; Raymondo Gabriel Maglione and John Mellor, Owens College, Manchester; William John May, William Morgan, and Clayton Conyers Morrell, London Hospital; Leonard Alexander Stewart Mutch and Arthur Stanley Piper, Birkbeck Institute; Thomas Norman and Felix William Parfitt, Guy's Hospital; Stanislaus Reader, Stonyhurst College; Leslie Lewis Clayton Reynolds, Epsom College; Harold Trenchard Rossiter and George Alan Simmons, St. Thomas's Hospital; John Walter Lennox Scott, Westminster Hospital; Robert Burslem Sparrow, London Hospital; Maurice Redfearn Smith, George Gilbert Timpson, and William Westland Vaughan, Guy's Hospital; Frank Harold Stephens and Alan Geoffrey Wells, St. Mary's Hospital; Reginald Thane Taylor, Birkbeck Institute; Trewyn Richard Williams, University College, Cardiff; and Albert Blaghrough Wolfenden, Yorkshire College, Leeds.

UNIVERSITY OF EDINBURGH: FACULTY OF MEDICINE.

—The following is the official list of passes at the recent First, Second, and Third Professional Examinations:—

First Professional Examination.—Thomas Addis, D. C. Alexander A. C. Alport, K. G. Archer, C. R. M. Baker, George Banks, George S. Banks, D. M. Barker (with distinction), G. G. Bartholomew, Douglas Bell, W. J. E. Bell, J. W. Bingham, Norman Black, D. P. Blair, R. A. Blake, Elizabeth H. Brock, Herbert Brown, J. W. Cairns, J. S. Caldwell, Herbert Cargin, N. S. Carmichael, Marjorie Duake-Cohen, William Collins, B.A., H. P. Cook, F. W. Cragg, J. A. Cruickshank, Irene B. Cunningham, Davidina R. J. Davidson, Thomas Davidson, L. F. Dawson, J. M. Dickson, N. C. Dutt, H. A. Edwards, C. E. Elliston, S. C. Fernando, R. S. Frew, F. H. S. Gardner, Jessie H. Gellatly, D. G. Gray, E. J. C. Groves, J. T. Gunn, George Hadden, J. R. Hall, D. G. Harries, W. M. Hewetson, J. R. Holgate, J. C. Holm, G. H. Howe, Joseph Ings, Annie Jackson, Solomon Kark, J. R. Kerr, J. S. Kinross, Ethel Landon, James Lindsay, J. A. Loughridge, A. S. Macbeth, T. A. MacGibbon, B.Sc., K. W. Mackenzie, Helen W. M'Millan, Stewart M'Naughton, W. J. Maloney (with distinction), S. E. Martin, E. S. Massiah, D. M. Matthieson, M.A., Ada E. Miller, A. I. Miller, Aimee E. Mills, B.Sc., O. M. Mirylees, D. L. Morrison, H. L. Morrow, Harold Mowat, R. E. Moyes, Anna M. Mulholland, E. B. Munro, R. R. Murray, R. R. U. Newman, A. J. R. O'Brien, A. A. Ollivierre, William Patton, D. H. Paul, J. L. Pearce, K. A. O. Quainoo, George Raffan, Mabel L. Ramsay, H. E. Rawlence, W. E. Reynolds, C. S. C. Rippon, H. D. Robb, T. E. Roberts, J. Z. H. Rousseau, W. M. Scott, W. J. B. Selkirk, M.A., J. G. B. Shand, Alice C. Sharp, E. S. Simpson, I. Y. Small, T. R. Smith, R. A. Spence, Alexander Stephen, M.A., A. D. Stewart, W. J. Taggart, S. H. S. Taylor, B.A., R. B. Thomson, Nettie B. Turnbull, A. P. Wall, D. R. P. Walther, J. D. Wells, H. M. Whittell, Richard Wilkins, H. C. Wilson, Marian E. Wilson, and James Young.

Second Professional Examination.—R. T. G. Aickin, John Allen, G. W. Armstrong, Agnes Balfour, William Basson, John Brennan, Robert Buchanan, Samuel Burns, Harry Caird, T. P. Caverhill, D. Halliday Croom, F. D. Crosthwaite, Alice M. Ebden, H. N. Fletcher, F. H. Gibson, T. M. Guthrie, George Harrison, G. W. Harty, Isabel Hill, Janette T. Hill, T. J. H. Hofmeyr, F. E. Larkins, F. T. C. Linton, M.A.; C. D. Lochrane, J. M. Lovett, Alexander Lundie, Henry MacCormac, J. W. M'Ewan, N. D. M'Kay, William Mackenzie, H. C. Martin, A. G. M. Middleton, C. R. P. Mitchell, G. I Moriarty, Helen Morison, Thomas Nicol, C. F. A. Oberlander, Labbhu Ram, Charles Reece, W. J. D. Robertson, W. S. Robertson, L. C. Robinson, J. A. Ross, F. G. Saleeby, William Sanderson, D. J. Scott, J. E. Scott, M.A.; W. H. Selby, W. H. Simpson, J. Henderson Smith, Effie Stuart, John Tait (with distinction), E. J. Taylor, T. T. Thomson, J. P. du Toit, E. A. Turpin, Caroline Twigge, R. M. Walker, J. H. D. Webster, Leonard West, R. M. Manwaring White, W. C. P. White, W. Y. Woodburn, A. C. T. Woodward. *Old Regulations.*—F. R. Bremner, L. A. Drake, S. C. Roy.

Third Professional Examination.—Nina H. Beath, Constance A. Bennet, G. S. Blandy, J. G. Briggs, G. G. Buchanan, H. H. Bullmore, W. C. Burton, E. E. Cassaday, R. E. Collins, A. F. R. Conder, H. L. Cumming, Henry Curwen, A. R. Douglas, F. C. Drew, John Fairbairn (with distinction), Agnes J. Gardner, E. C. Gimson, R. G. Gordon, J. A. Gray, L. A. Holcroft, C. H. Houghton, John Hunter, Arthur Hutley, Bertha Jex-Blake, J. M. Johnstone, W. E. Knight, W. S. Laidlaw, Abraham Leach, A. B. Leakey, J. C. London, A. W. B. Loudon, J. G. M'Caughey, Alexander M'Ewan, Daniel Mackinnon, Evan Macmillan, J. B. Mason, E. L. Meynell, R. C. Monnington, E. J. Morton, Robert Murray, Charles Nelson, J. H. C. Orr, Harry Overy, A. C. Owen, D. E. S. Park, John Politachi, E. C. Pritchard, A. F. H. Rabagliati, J. A. Raubenheimer, David Sandler, G. D. Sloan, M. W. Smart, Baba M. S. Sodhi, David Sutherland, A. B. M. Thomson, J. F. van de S. de Villiers. *Passed in Pathology.*—G. M. Brunton.

FOREIGN UNIVERSITY INTELLIGENCE.—*Göttingen:*

Dr. W. Weber has been recognised as *privat-docent* of

Mental Diseases.—*Heidelberg:* Dr. Julius Hegener has been recognised as *privat-docent* of Otology and Dr. Martin Jacoby as *privat-docent* of Pharmacology. Dr. H. Braus of Würzburg has been appointed Extraordinary Professor of Anatomy.—*Jena:* The chair of Pharmacy, vacant by the retirement of Dr. Seidel, has been offered to Dr. Kionka of Breslau. Dr. Berger has been recognised as *privat-docent* in the Medical Faculty. Dr. Maurer of Heidelberg has been appointed to the Chair of Anatomy in place of Dr. Max Fürbringer.—*Lille:* Dr. Baudry has been allowed to exchange the chair of External Pathology for that of Clinical Pathology, vacant by the appointment of Dr. de Lapersonne to Paris.—*Lyons:* Dr. Weill has been appointed to the Professorship of Children's Diseases.—*Philadelphia (Polyclinic):* Dr. Francis R. Packard has been appointed to the chair of Otology in succession to Dr. Seiss, resigned.—*St. Petersburg (Military Medical School):* Dr. Richard Peters has been recognised as *privat-docent* of Children's Diseases.—*Würzburg:* Dr. Jacob Riedinger has been recognised as *privat-docent* of Surgery and Dr. Paul Römer as *privat-docent* of Ophthalmology.

CORNWALL COUNTY LUNATIC ASYLUM, BODMIN.—At the meeting of the Cornwall County Council held on August 6th it was decided to apply to the Local Government Board for sanction to a loan of £105,000 for the purposes of the extension of the county lunatic asylum. The present building accommodates nearly 800 patients, and the overcrowding of the institution has engaged the attention of the authorities for some time. The plans of the proposed extension, which have been approved by the Commissioners in Lunacy and the Secretary of State, will provide accommodation for 400 patients. When the new buildings are completed it has been decided that nearly the whole of the present asylum shall be allotted to female patients. The total accommodation will be for 510 male and 542 female pauper lunatics. In the private asylum 49 patients are admitted, making an aggregate of 1101 patients.

WORKHOUSE INFIRMARY NURSING: DEPUTATION TO THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.—A small deputation from the Workhouse Infirmary Nursing Association, consisting of the Hon. Mrs. J. G. Talbot (vice-president of the association and chairman of the executive committee), the Viscountess Knutsford (a member of the executive committee), Miss Wilson (treasurer), and Miss Gill (secretary), was received on August 2nd at the House of Commons by the Right Honourable Walter Long, M.P., President of the Local Government Board. Mr. J. G. Talbot, M.P., introduced the deputation. Mr. S. B. Provis, C.B. (permanent secretary to the Local Government Board), Mr. W. E. Knollys, C.B. (assistant secretary), and Dr. A. H. Downes (Poor-law medical inspector) were present. The object of the deputation was to discuss details of a statement which had been submitted by the association to Mr. Long early in the year touching upon the present condition of the nursing in country workhouse infirmaries and the dearth of nurses obtainable for these infirmaries. The President of the Local Government Board listened to the members of the association most attentively and clearly showed that he took considerable interest in the questions at issue. Ample time was placed at the disposal of the delegates and some important points were discussed. The serious dearth of nurses available for the Poor-law service was brought forward as the main cause for action, and the Local Government Board were urged to adopt measures for the special training of nurses for workhouse infirmaries. It was suggested that it might be practicable to train nurses in the metropolitan and other Poor-law infirmaries of adequate size and organisation and to bind them to the service as Government officials to work for a definite period in provincial and country workhouse infirmaries as well as in metropolitan. The desirability of a sub-department of the Local Government Board being formed to deal with the whole question of nursing in workhouse infirmaries was urged by the deputation. Mr. Long intimated that he had under consideration the possibility of making alterations in the existing regulations affecting the position of nurses in workhouses and infirmaries. He promised careful consideration of the suggestions made by the deputation, but was unable to hold out much hope that the Local Government Board could themselves undertake the training and placing of nurses.

VACCINATION AT BATH.—At the meeting of the Bath Board of Guardians held on August 7th it was reported that from July to December, 1900, 824 births were registered in the city of Bath. 499 children were successfully vaccinated; six were insusceptible; the parents of 63 had certificates of conscientious objections; 82 had died unvaccinated; in 39 cases vaccination was medically postponed; 38 children had removed to places unknown; and 97 were unaccounted for. During the year 1900 90 certificates of conscientious objection were received by the vaccination officer, and for the half-year ending June 30th, 1901, 72 such certificates were received.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The Mabel Webb Research Scholarship for the encouragement of original work in pathology, physiology, or chemistry will be given in October to a past or present student of the school. Candidates must state the nature of the work which they propose to undertake in one of the above branches of study, and the holder of the scholarship is required to keep the lecturer or lecturers in the department selected informed of the progress of the work. The value of the scholarship is £30 a year for two years. Applications will be received up to Sept. 1st and should be sent to the secretary, 8, Hunter-street, London, W.C.

AT Woodtown, Devon, on August 2nd, an inquest was held respecting the death of an infant which occurred shortly after birth. The nurse who attended the mother stated that the child cried lustily at birth but expired five minutes later. A medical man who was called in about three-quarters of an hour after birth stated that death was due to strangulation owing to the umbilical cord being round the neck of the deceased, and added that if the nurse had been more experienced she could have remedied this. The coroner, in summing up, remarked that the nurse, a single woman, aged 23 years, was too young to undertake midwifery duties, and although there was no criminal neglect in this case he advised the nurse not to act in other cases until she had had more experience. The jury returned a verdict of "Death from accidental strangulation" and endorsed the remarks of the coroner.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, AUGUST 8TH.

Ptomaine Poisoning.

MR. CHANNING asked the President of the Local Government Board whether he would direct an inquiry into the circumstances attending the ptomaine poisoning of two ladies by decomposed cream and whether he would take prompt steps to check the improper use of preservatives to enable articles of food to be disposed of to customers when in a state of decomposition dangerous to health.—MR. WALTER LONG replied: I have seen a newspaper paragraph as to the inquest in the case mentioned in this question, and I will endeavour to obtain a report from the medical officer of health of the borough on the subject. I expect to receive in a few days the report of the Departmental Committee on Food Preservatives and I hope then to be in a better position to judge how dangerous decomposition in food may be satisfactorily prevented.

The Study of Mental Pathology.

MR. WILLIAM JOHNSTON asked the Chief Secretary to the Lord Lieutenant of Ireland whether, having regard to his reply to the deputation which waited on him in Dublin concerning a proposal to establish a pathological laboratory devoted to research in connexion with insanity for the asylums of the country, he could introduce a clause into the Local Government (Ireland) Amendment Bill empowering county councils to contribute towards the support of such a central laboratory for the study of mental pathology.—MR. WYNDHAM replied: Such a clause could not be inserted in the Local Government Act Amending Bill, but it would be germane to the Lunacy Bill now before the House. I earnestly hope to be able to introduce an amendment of this character into the latter Bill.

The Nursing Question in Ireland.

This question was discussed in Committee of Supply on the vote for the Local Government Board in Ireland.—MR. WYNDHAM insisted that the nursing in Irish workhouses had not reached a sufficiently high level and that the Local Government Board were justified in its attempt to raise it and he announced that the Board would go forward with its nursing order though in no arrogant or drastic manner. Nuns, he said, had done good work, but they could not do all that was required of nurses; they were forbidden, for instance, by the rules of their orders to assist in certain classes of operations and it was obvious that in addition to nuns there must be other fully-qualified nurses. As to the recognition of training in the smaller hospitals and infirmaries that was a matter within the discretion of the Board and he undertook that the Board would give it immediate consideration.

FRIDAY, AUGUST 9TH.

The Army Medical Service.

Major RASCH asked the Under Secretary of State for War whether he could state when the report of the committee on the Army Medical Department would be ready, and if it would be published.—Lord STANLEY replied: I am not able to say when the report of the departmental committee will be ready. The question of its publication does not therefore arise at present.

Medical Research in Ireland.

Mr. FIELD asked the Chief Secretary to the Lord Lieutenant of Ireland (1) whether he was aware that the English Local Government Board had at its disposal a yearly grant of funds for the purpose of promoting scientific investigation; and (2) seeing that the Irish Local Government Board had not at its disposal any sum for a similar purpose, would he recommend the placing of the Irish Local Government Board in this respect on the same footing as the similar Board in England.—Mr. WYNDHAM replied: The vote for the English Local Government Board contains provision of a sum of money for "auxiliary scientific investigations" in connexion with the medical department of the Board. I am inquiring as to the special objects with which this money is voted; until I receive information on this point I cannot reply to the suggestion in the second paragraph.

MONDAY, AUGUST 12TH.

Vaccination Exemptions.

Mr. CORBIE GRANT asked the Home Secretary whether he was aware that William Venables of Thornton Hough was granted an exemption from vaccination as a conscientious objector by the Birkenhead county magistrates for his first child in June, 1899, and that he was refused exemption by the same court in July, 1901, for another child, then under four months old, and whether there was any way in which he could obtain exemption for this child also.—Mr. RITCHIE replied: The facts are as stated. It appears that in the second case the applicant failed to satisfy the justices of his conscientious belief that vaccination would be prejudicial to the health of the child in question. It is open to him to apply to any other justices for a certificate of exemption until the child attains the age of four months.

Civil Surgeons in the Army.

Dr. THOMPSON asked the Financial Secretary to the War Office if civil surgeons now serving with His Majesty's Army in Great Britain and Ireland were entitled to an increase of salary after three years' service, and also to a gratuity of £100 on completion of their engagement.—Lord STANLEY replied: No, they are not so entitled, but the question of the increase of salary is receiving consideration.

The Compound Titles of Retired Army Medical Officers.

Dr. THOMPSON asked the Financial Secretary to the War Office if he would consider the advisability of abolishing the compound titles of retired army medical officers.—Lord STANLEY replied: This question has been very carefully considered and it was not held advisable to abolish the compound titles except in the case of retired officers who were recalled or re-employed.

TUESDAY, AUGUST 13TH.

The Ambulance Experiments.

Mr. ROUND asked the Financial Secretary to the War Office whether he could state what progress had been made in the construction of ambulances of a lighter character than those used at the commencement of the war in South Africa; and if those sent out during last year, as stated by Lord Raglan, had given complete satisfaction.—Lord STANLEY replied: Experiments are still in progress with an improved ambulance and a special committee is considering the subject. No reports have been received in regard to the wagons referred to in the last paragraph.

The New Factory and Workshop Legislation.

The Report stage of the Bill to amend and consolidate the Factory and Workshop Acts was taken at this and the previous sitting of the House. The subjects discussed had not, as a rule, any special medical interest and therefore need not be dealt with in any detail. After a very long debate the House decided by a majority of 22 votes to confirm the action of the Grand Committee in making mid-day the time for "the Saturday stop" in textile factories. The laundry question was also debated at great length, the decision of the House with regard to it being to omit the laundry clause altogether and to leave the law as it stands.—On the motion of Mr. RITCHIE words were inserted in the Bill providing that no meal shall be taken in any factory or workshop where lead, arsenic, or other poisonous substance is so used as to give rise to dust or fumes.

WEDNESDAY, AUGUST 14TH.

The Study of Insanity.

On the motion of Mr. GEORGE WYNDHAM the following clause was inserted in the Lunacy (Ireland) Bill—viz: "The committees for any two or more distinct lunatic asylums may agree to unite in providing and maintaining a laboratory for pathological research in connexion with insanity and nervous diseases, and may defray the expenses incurred in pursuance of an agreement under this section by contributions from the funds at their disposal for the maintenance of their respective asylums."

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, Charing-cross-road, London.

Walks in London. By Augustus J. C. Hare. Seventh edition. In two vols. Price 12*s*.

BALE, SONS, AND DANIELSSON, Oxford-street, London.

Darwin, considered mainly as Ethical Thinker, Human Reformer, and Pessimist. By A. H. Japp, LL.D., F.R.S.E. Price 2*s*.

BRAUMÜLLER, W., Wien and Leipzig.

Topographie des Weiblichen Ureters. By Dr. Julius Tandler and Dr. Josef Halban. Price 30 marks.

KIMPTON, HENRY, Furnival-street, Holborn.

Progressive Medicine. Vol. ii. Edited by H. A. Hare, M.D. Price not stated.

A Treatise on Orthopædic Surgery. By Royal Whitman, M.D. Price not stated.

Diseases of the Stomach. By J. C. Hemmeter, M.D. Second edition. Price 30*s*.

A Manual of Practical Hygiene. By Charles Harrington, M.D. Price 21*s*.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D. Third edition. Price 25*s*.

LINDLEY, PERCY, 30, Fleet-street, London.

The Great Eastern Railway Company's Tourist Guide to the Continent. Edited by Percy Lindley. Price 6*d*.

MACMILLAN AND CO., London and New York.

A Manual of Medicine. Edited by W. H. Allchin, M.D., &c. Vol. iii. Price 7*s*. 6*d*.

PRUDENTIAL PRESS, Newark, New Jersey.

History of the Prudential Insurance Company of America. By F. L. Hoffman, F.L.S. Price not stated.

SANITARY PUBLISHING CO., Fetter-lane, London.

By-Laws as to House Drainage and Sanitary Fittings made by the London County Council. By G. J. G. Jensen, C.E. Price 3*s*. 6*d*.

SIMPKIN, MARSHALL AND CO., London.

Home Exercises for Spinal Curvatures. By Richard Timberg. Price 2*s*.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ARTHUR, RICHARD, M.D. Edin., has been appointed Honorary Assistant Surgeon to the Ear and Throat Department of the Sydney Hospital.

BARNES, E. W., L.K.Q.C.P. Irel., L.F.P.S. Glasg., has been appointed District Medical Officer to the Liverpool Union, vice Dr. Caldwell, resigned.

BARTLETT, W., M.R.C.S. Eng., has been appointed Government Medical Officer at Port Macquarie, N.S.W.

CLARKE, W. H., M.R.C.S. Eng., L.S.A., has been appointed Public Vaccinator for Wellington, N.Z.

COLLUM, ROWLAND W., M.R.C.S., L.R.C.P., has been appointed Assistant Anæsthetist to the Hospital for Sick Children, Great Ormond-street, W.C.

COULTER, R. J., M.B., F.R.C.S. Irel., has been appointed Ophthalmic Surgeon to the Newport and Monmouthshire Hospital, vice B. W. Gowring, M.D., resigned.

CURTIS, H. J., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Hospital for Children and Women, Waterloo Bridge-road.

DEAN, E. C., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to Greenbushes, West Australia.

DIX, R. H., M.B., B.S. Durh., has been appointed Junior House Physician to the Royal Infirmary, Newcastle-on-Tyne.

FENNELL, CHARLES H., M.A., M.B., B.Ch. Oxon, M.R.C.S., L.R.C.P., has been appointed Medical Registrar to the Hospital for Sick Children, Great Ormond-street, W.C.

GRESSWELL, D. A., M.D. Oxon., has been appointed Permanent Head of the Department of Public Health, Victoria.

HESLOP, J. W., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

JOHNSON, HENRY SANDFORD, M.R.C.P. Irel., L.F.P.S. Glasg., has been re-appointed Medical Officer for the Ashburton (Devon) Urban District Council.

JONES, WILLIAM WATKINS, M.D., C.M. Edin., D P.H. Cantab., has been re-appointed Medical Officer of Health for the Gelligaer and Rhigos Rural District Council.

MCCLINTOCK, LAWSON TAIT, M.B., Ch.B. Edin., has been appointed Junior House Surgeon to the Salop Infirmary, Shrewsbury.

ORMEROD, HENRY LAWRENCE, M.D., B.Ch. R.U.I., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Shirehampton Isolation Hospital.

PORTER, A. E., M.D., D.P.H. Cantab., has been appointed Assistant Medical Officer of Health for the City of Leeds.

ROE, R. W. E., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for No. 2 District of the Ongar Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident House Surgeon. Salary £100 per annum, with board, residence, &c.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with apartments, rations, coals, gas, laundry, and attendance.

BOROUGH HOSPITAL, Bootle, Liverpool.—Junior Resident. Salary £80 per annum, with board and laundry.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence. Also Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—Casualty House Surgeon. Salary £75 per annum, with board, residence, &c.

CHURCH OF SCOTLAND GUILD MISSION, Kalimpong, Himalayas, India.—Medical Missionary.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer, unmarried. Salary £150, increasing to £200, with apartments, board, washing, and attendance.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary £100, with board, residence, and washing.

DISTRICT HOSPITAL, West Bromwich.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

EASTERN COUNTIES' ASYLUM FOR IDIOTS, IMBECILES, AND THE FEEBLE-MINDED, Colchester.—Resident Medical Attendant, unmarried. Salary £100 per annum, with furnished apartments, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House Surgeon for six months. Honorarium £25, with board, residence, &c. Also Medical Officer, for six months, renewable. Salary at rate of £100 per annum, with luncheon.

EAST RIDING OF YORKSHIRE.—County Medical Officer of Health. Salary at rate of £400 per annum, rising to £500 per annum, with allowances.

HALIFAX WORKHOUSE HOSPITAL, Salterhebble.—Medical Officer. Salary £105 per annum.

HULL ROYAL INFIRMARY.—Casualty Officer. Salary £80 per annum, with board and lodging.

JOHANNESBURG.—Medical Officer of Health. Salary £1500 per annum.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 a year, with board and lodging.

LEICESTER INFIRMARY.—Honorary Assistant Physician and Honorary Assistant Surgeon.

LEICESTER ISOLATION HOSPITAL.—Resident Medical Officer. Salary £120, with board and washing.

LINCOLN COUNTY HOSPITAL.—Assistant House Surgeon for six months, eligible for re-election. Honorarium £25, with board, residence, and washing.

MANCHESTER ROYAL EYE HOSPITAL.—House Surgeon.

NORTHAMPTON GENERAL INFIRMARY.—House Physician (unmarried). Salary £100 per annum, with apartments, board, attendance, and washing.

OWENS COLLEGE, Manchester.—Junior Demonstrator in Physiology. Salary £100, rising to £150 per annum.

PARISH OF ST. LEONARD, Shoreditch.—Resident Assistant Medical Officer for the Infirmary. Salary £150 per annum, with rations, apartments, and washing.

ROYAL LANCASTER INFIRMARY.—Assistant House Surgeon, single. Salary £80 a year, with residence, board, attendance, and washing.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

SALOP INFIRMARY, Shrewsbury.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

SCARBOROUGH, BOROUGH OF.—Medical Officer of Health. Salary £325 per annum, rising to £375 per annum.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer (unmarried). Salary £75 per annum, with apartments, board, and washing.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

SUFFOLK GENERAL HOSPITAL, Bury St. Edmunds.—House Surgeon. Salary £100, with board, lodging, and washing.

TOWNSHIP OF MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer. Salary £110 per annum, with apartments, fire, light, washing, and attendance.

TOXTETH PARK, WORKHOUSE AND INFIRMARY, Liverpool.—Assistant Medical Officer. Salary £100 per annum, with board, washing, and apartments.

UNIVERSITY OF GLASGOW.—Examiner for Degrees in Medicine and Science, with special reference to Physics. Salary £30.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

WOLVERHAMPTON EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with rooms, board, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CHURCHILL.—On the 9th inst., at the Brick House, Billingshurst, Sussex, the wife of J. A. Churchill, M.R.C.S., L.R.C.P., of a son.

GODSON.—On August 9th, at Linden House, Cheadle, Cheshire, the wife of John H. Godson, M.B., B.S. Camb., of a daughter.

HAWKINS.—On August 5th, at London-street, Reading, the wife of Francis Henry Hawkins, M.D. Edin., M.R.C.P. Lond., of a daughter.

NEWBOLT.—On the 13th August, at 42, Catherine-street, Liverpool, the wife of George Palmerston Newbolt, M.B., F.R.C.S., of a son.

PROBYN-WILLIAMS.—On August 5th, at Welbeck-street, the wife of R. J. Probyn-Williams, M.D. Durh., of a daughter.

DEATHS.

ALDRIDGE.—On August 7th, 1901, at Belle Vue House, Plympton, Mary Ann, beloved wife of the late Joseph Aldridge, of Plympton House, Plympton, aged 85 years.

BOULTER.—On August 7th, at Farquhar-road, Upper Norwood, Samuel John Boulter, M.R.C.S., L.S.A., aged 82 years.

FRANCIS.—On August 10th, at Spencer-park, in his 81st year, Charles Richard Francis, M.B. Lond.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A PRESCRIBING QUACK.

AN inquest held by Mr. Wynne Baxter at Stepney at the beginning of the week served to introduce to the public, not for the first time, the dangerous habits of one J. C. Purdue, F.C.S.M., a herbalist. The deceased was a male child, aged 12 months, who had been taken by the mother to Purdue's establishment—a druggist's shop having the words "Botanical Herbalist" over the door. According to the mother, who deposed that she thought Purdue was a "doctor," Purdue examined the child, gave her some medicine and liniment for which he charged 6*d.* and said that if the child became worse he was to be brought again. The child got no better, and Purdue seems to have sounded him, prescribed lemon-juice and barley-water, visited the patient, and finally advised sending for "another doctor," whom he recommended. Purdue in his evidence, which will be found fully reported in the *Daily Mail* of August 14th, described himself as a "registered herbalist ..... registered in 'Kelly's Directory,'" and said that his previous conviction for pretending to be a medical man was "a most disgraceful thing," brought about by "two malicious doctors." A juror asked if Purdue was known as the "tea-leaves doctor," and Purdue handed to the coroner a paper, which appears to have been an Act of Parliament of Henry VIII. relating to witchcraft and sorcery, under which he claimed to carry on his business of prescribing unmolested. The coroner was not much impressed by Purdue's attempt to obtain a legal status, for he told him that he was "acting as a pirate and imposing on these poor people." Mr. Charles Welch gave evidence that it was not possible to say for certain that calling in a medical man would have saved the infant's life, and described Purdue's nostrum as "smelling very much of Worcester sauce." The coroner said that the bottle was labelled "J. C. Purdue, F.C.S.M., London. Safe Medicine. Member of the Magnetic and Botanic School of Safe Medicine. London. Founded 1893. Advice gratis daily." He asked if any society would take up the prosecution of Purdue. We suppose that the London Society of Apothecaries will have no difficulty in securing Purdue's conviction. He is an old and hardened offender. At the beginning of last year we recorded the sleath under his hands of a man with pulmonary trouble (THE LANCET, Jan. 27th, 1900, p. 284), and there is no doubt that he has for years been trading upon the ignorance of the sick poor by pretending to be a medical man. The cruelty of such offences as Purdue's lies in the fact that the quack deprives the sick poor, if they are very ill, of their chance of recovery. Many patients might be saved if the medical man could see them early enough. Impostors like Purdue waste the precious time of the sick by telling them lies, while they exhibit silly potions of tea or barley water. Then, when it is obvious that the case is going to the bad and probably when the patient's funds are running low, a medical man is called in—too late. At the inquest it is impossible to say for certain in any particular instance, whatever may be the probabilities, that the life could have been saved, and so the charlatan gets off. We hope that an exemplary fine may soon bring Purdue to a better understanding of the laws of his country. We do not suppose that anything will convince him that he is a mischievous ass, yet he is that as well as a law-breaker.

WANTED—A SCHOOL.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you would allow me to ask in your columns whether there is any school for the orphan daughters of medical men to which I could apply for the admission of my youngest daughter, aged 12½ years. My husband, who was formerly a student of Charing-cross Hospital, died in 1899, leaving me with two young daughters. At the time of his death he had been in independent practice only a short time and had not been able to make provision for us. He had recently lost nearly all his small capital in an unfortunate speculation. I have been obliged to break up my home and to accept a position as housekeeper and am unable support my youngest child. The eldest is in the care of friends and is receiving a good education. I should be very grateful if any of your readers would kindly give me the name of a school to which I could apply for the admission of my daughter, who is a healthy girl.

I am, Sirs, yours faithfully,

EVELINE GREENLEAF.

Emile Villa, Sunny-gardens, Hendon, August 12th, 1901.

VACCINATION FEES.

To the Editors of THE LANCET.

SIRS,—I have a non-dispensing practice in the suburbs of a large provincial city and charge 3*s.* 6*d.* (my lowest fee) for vaccinating children of £1 1*s.* confinements. Each case is done with calf-lymph, which costs me 8½*d.* I should be glad if your readers would kindly tell me if my charge is above the ordinary for such cases, as I have been told lately several times that I charge more than my neighbours.

I am, Sirs, yours faithfully,

August 14th, 1901. M. S.

GRUESOME SUPERSTITIONS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of July 6th, p. 41, you refer to "the bleeding Host." Could any of your readers kindly give me some particulars of this reported miracle or tell me where I might obtain details of the same? I should like to know, for example, when first the miraculous power or powers were claimed, their nature and extent, and the circumstances under which they were manifested. Is there any publication on this subject? I can find none. Some time ago you had a reference to dead bodies submerged being located (or alleged to be located) by means of a loaf of bread. Kindly give me the date of this article. Does any reader of THE LANCET know of any book or monograph dealing with the subject of trial by ordeal?

I am, Sirs, yours faithfully,

August 6th, 1901. CORPUS VILE.

*** The note on the location of a drowned body will be found in THE LANCET of Nov. 24th, 1900, p. 1536.—ED. L.

THE KEELEY INSTITUTE.

To the Editors of THE LANCET.

SIRS,—Can you favour me with any information about the "Keeley Institute" for the cure of intemperance? I know there have been occasional paragraphs in THE LANCET, but unfortunately I send my copies of THE LANCET on to a friend, and do not retain them. I daresay you can guess the facts leading to my query—the village "Lady Bountiful," anxious to do anything to reclaim a neighbour rapidly drinking himself to ruin and death, and an appeal to me. Of course, on the face of it, it looks like quackery, and probably is, but with the ethical part of the business I have nothing to do, as I should certainly not take any personal action in the matter. Do you happen to know if there is anything in the treatment? The "double chloride of gold" at eight guineas a week reads like bosh, and the "cures" may possibly be on a par with the "Mother Seigel's Syrup" testimonials. But these good ladies, from the most charitable motives, want to do something and are caught by the glamour of the name of Canon Fleming. And I have promised to get what information I can. If you can help me I shall be grateful.

I am, Sirs, yours faithfully,

August 12th, 1901. PROVINCIAL.

*** Our correspondent will find some information as to the absurd so-called Keeley Cure in Vol. II. of THE LANCET for the year 1892.—ED. L.

AMERICAN MEDICAL DEGREES IN NEW ZEALAND.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you would kindly answer the following questions, through the medium of THE LANCET. 1. Can a person term herself "Doctor" (if she does not practise) if she holds no diplomas? 2. Can a person who holds a bogus (or bought) diploma legally use the title of "Doctor" and place a brass plate outside the door with "Dr. ——, M.D.," on it? 3. If you know that a person holds a diploma from a college (which is registered in the U.S.A.), but which also sells such diplomas, would one be justified in saying that such person was unqualified (even if they seemed well informed as regards medicine, &c.) and held a bogus diploma, or would such be actionable? 4. Can you inform me whether the diploma mill of Dr. Armstrong, People's Institute, Buren-street, Chicago, is still in existence, and what punishment was meted out to Dr. Armstrong for making use of the mails to defraud? (see THE LANCET, Dec. 1st, 1900, p. 1621). 5. Where could one obtain reliable information as to which are the bodies in the United States of America which are able to grant diplomas which would be recognised in Great Britain? Is there any book issued by their Government which would give one information? 6. Could a person practise in the United States with one of these bogus diplomas? 7. Would the following gentlemen, whose qualifications are appended and who are upon the New Zealand Medical Register, be able to register themselves upon these qualifications in Great Britain? M.D. Bellevue Hosp. Med. Coll., New York, U.S.A.; M.D. Jefferson Med. Coll., Philadelphia, U.S.A.; M.D. Univ. Lake Forest, Chicago, Illinois, U.S.A.; M.D. Univ. Michigan, U.S.A.; M.D. Homœopathic Med. Coll. of Missouri, U.S.A.; M.D. Michigan Coll., U.S.A.; M.D. Cooper Med. Coll., San Francisco, U.S.A.; M.D. Univ. Iowa, U.S.A.; M.D. Univ. Southern California, U.S.A.; M.D. Detroit Coll. Medicine, U.S.A.; M.D. Cincinnati Coll. Med. and Surg., U.S.A.

Would you kindly reply to me through the columns of THE LANCET, and oblige Yours faithfully,

May 29th, 1901. POBIRUA.

*** 1. It would seem (we refer to this country) to be open to anybody to call himself or herself "Doctor." But if an unqualified person attempts to obtain money or to pass in the public eye as a qualified practitioner he can be prosecuted by law. 2. The owner of a bogus diploma is not qualified, and our correspondent is referred to the answer to the first question. 3. We cannot say without knowing what the institution referred to is. 4. We understand that the People's Institute, Chicago, has been abolished. We do not know what punishment his country meted out to Armstrong. 5. The University of the State of New York (Albany) issued last year from the College Department certain hand-books on professional education in the United States; the volume dealing with medicine, price 45 cents, contains the information required. 6. This question cannot be answered, as different States, unfortunately for the United States as a whole, have different arrangements in these matters. 7. The list of institutions the medical degrees of which can be registered in Great Britain, if obtained prior to June 25th, 1886, but only *in addition* to, not in place of, British qualifications, will be found in the current Medical Register, page 78. The two first institutions named by our correspondent are also on the list in the Medical Register.—ED. L.

THE METHODS OF A PUBLIC VACCINATOR.

WE have received the following specimen of a circular which has been sent by a public vaccinator to a lady in a certain district. Why we have only now received it when it is nearly three months old we do not know, but although it is old it is none the less worthy of comment.

"———, May 16th, 1901.

Dear Madam,—As Vaccination Medical Officer of this District, I must ask you to give your earnest and best attention to your little one's case.

The new Act is rich in blessings, proved by the following important facts, which I will explain in a few simple words.

1st. The calf lymph from Government is so carefully selected and tested that its *purity is absolutely guaranteed*.

2nd. The comforts and convenience of the mother are *assured* by the medical officer attending the home and arranging the *almost painless operation in less than two minutes*, with strict regard to gentleness and sanitation.

3rd. Visits, posting certificates to the authorities, and *securing* the mother from future trouble *free of all cost*.

I am very anxious with regard to this grave duty which all of us owe to our families and the public—namely, *protection* from one of the most contagious, deadly, and repulsive diseases, the horrible plague of small-pox.

I am, dear Madam, sincerely yours,

———, M.D., M.R.C.S., L.S.A."

We have no hesitation in saying that this is an improper document for a public vaccinator to circulate. It is part of a public vaccinator's privilege to try to secure that his district should be properly vaccinated, but it is not part of his duty to try for a monopoly of the operations. Such a circular as the one we have quoted could only lead to ill-feeling between the public vaccinator and his professional brethren in the district.

PRESERVING AND MOUNTING MOSQUITOES.

M. I. Cross has the following note in the August number of *Knowledge* with regard to the mounting of mosquitoes.

"Some time has elapsed since the connexion between mosquitoes and malarial fever was established, yet satisfactory specimens of the former have reached England in very small numbers although medical men and others who are interested in the matter have constantly wished to obtain them. The reasons are that the unmounted specimens are not put up in suitable preservative medium for travelling, or if they are mounted sufficient care has not been exercised in the process. Several methods have been published in medical papers on the subject of preserving mosquitoes, but none of them are really satisfactory ones. The following will be found to answer the purpose. To send unmounted mosquitoes by post they should be preserved in dilute alcohol, two parts of rectified spirit to one part of water. Too many should not be put in one bottle or they become entangled and broken. To make permanent mounts dilute glycerine, say one part glycerine to two parts water, in a shallow cell will be found best. The following is the process:—1. Remove the dilute alcohol and soak in water until all trace of the spirit is removed. 2. Soak in dilute glycerine for about 12 hours. 3. Make cell and when dry fill up with dilute glycerine and carefully place the specimens in it and apply the cover-glass. Should the mosquito be too opaque after soaking in water place it in a strong solution of carbolic acid for a few hours and when transparent wash in water, then place in dilute glycerine."

"PUBLICITY."

To the Editors of THE LANCET.

SIRS,—In reference to the above in THE LANCET of August 10th, p. 430, may I point out that the practice of inserting in the Irish papers that Dr. So-and-So has left his address for London or elsewhere or has returned to his residence from such-and-such a place, is very common amongst practitioners in Ireland. Hardly a day passes but you will see in the "fashionable" columns of the *Irish Times*, *Freeman's Journal*, &c., such a paragraph. In consequence, as much out of curiosity as otherwise, I about two to three years ago wrote to the secretary of the General Medical Council asking if an intimation in the daily papers such as I have referred to constituted medical advertising or not. In reply I was told that the General Medical Council could not express any opinion on the matter. Determined, then, if possible, to get a definite statement on the point I watched my opportunity and shortly afterwards noticed the following announcement—the text may not be exactly right, but it is not far out—in the *Irish Times*—viz.: "Sir William Thomson, M.D., President of the Royal College of Surgeons in Ireland, has returned to 54, St. Stephen's Green, Dublin, from attending the meeting of the General Medical Council." Sir W. Thomson is, I believe, the representative of the Royal College of Surgeons in Ireland on the General Medical Council. Immediately on its appearance I wrote to Sir William Thomson and asked him if he had it inserted, and, in any case, if he did not think the publication of his name and address in such a manner amounted to advertising in a professional way.

After a lapse of a few weeks I had an answer from the secretary of the council of the Royal College of Surgeons in Ireland saying that he was instructed to say in reply to my letter to Sir William Thomson that the Council of the Royal College of Surgeons in Ireland sanctioned the insertion of such paragraphs. I believe the paragraphs referred to in the Irish papers are published by the parties themselves, or, at least, with their knowledge and consent. After such an admission I cannot see that Dr. Fenton has sinned in any way, even if he inserted the paragraph you take exception to, and which was published in the *Daily Telegraph* of August 2nd last.

I am, Sirs, yours faithfully,

August 12th, 1901. WHAT IS SAUCE FOR THE GOOSE OUGHT TO BE SAUCE FOR THE GANDER.

THE WARREN FOUNTAIN PEN.

MESSRS. BINGE, WARREN, AND RIDGLEY of Great Saffron-hill, London, E.C., have sent us one of their Warren fountain pens. The price is 5*s.*, the nib is described as of 14-carat gold, and the mechanism is extremely simple.

"GRAND OPENING FOR A MEDICAL MAN."

To the Editors of THE LANCET.

SIRS,—I have been "taken in" by the alluring advertisements of house agents anxious to sell and to let their houses. In four instances recently the reply I got from each agent was that a grand opening for a medical man existed. In three I find the information given to be false; in each case the house had just been vacated by the occupier (a medical man) who had gone across or a few yards down the road. The chances of success in each case were very small. I write this after having been put to unnecessary and cruel expense.

I am, Sirs, yours faithfully,

August 14th, 1901. C. W. HARRINGTON, L.R.C.P.

Medicus writes:—"Can any reader of THE LANCET tell me the publisher of a work by Professor Schutter of Berlin University on the cancer bacillus?"

*** In this connexion our correspondent's attention may be directed to the letter from our Berlin Correspondent in our present issue, p. 494.—ED. L.

Mr. B. Brocks.—THE LANCET is not a fashion paper and we do not give advice upon complexion. Yet our correspondent might consult Redgrave's "Century of Painters." He will there find various recipes for producing skin effects—as practised by Sir Joshua Reynolds chiefly—effects which may give him a wrinkle (we would even say many wrinkles) if he tries them.

M.R.C.S., M.P.S.—With much of the letter we are in accord, but it is not worded in a way likely to ensure it attention. If the scheme is to receive serious notice it must not be anonymous.

A. B. G.—The procedure which our correspondent advocates has been referred to already in our columns.

R. T.—No.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

SATURDAY (24th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (19th).—WEST LONDON VACATION POST-GRADUATE COURSE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Some Surgical Emergencies and their Treatment.

THURSDAY (22nd).—WEST LONDON VACATION POST-GRADUATE COURSE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. E. A. Saunders: The Examination of Gastric Contents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1901, which was completed with the issue of June 29th, and the Title-page to the Volume, were given in THE LANCET of July 6th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1901 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 15th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 9	30·00	S.W.	...	122	86	61	62	67	Bright
,, 10	29·60	S.E.	...	128	79	65	66	72	Cloudy
,, 11	29·92	S.W.	0·14	117	69	58	59	64	Cloudy
,, 12	29·89	S.W.	...	121	71	57	56	59	Cloudy
,, 13	30·03	S.W.	...	121	76	56	57	61	Cloudy
,, 14	30·02	S.W.	0·50	112	73	60	60	66	Cloudy
,, 15	29·77	S.W.	...	103	67	59	60	62	Cloudy

During the week marked copies of the following newspapers have been received:—*Reading Mercury, Essex Telegraph, Essex County Standard, Bristol Mercury, Leeds Mercury, Hertfordshire Mercury, Mining Journal, City Press, Yorkshire Post, Windsor and Eton Express, South African Weekly News, Liverpool Daily Post, Lancaster Observer, &c.*

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